CLASS 106, COMPOSITIONS: COATING OR PLASTIC

SECTION I - CLASS DEFINITION

This class is the broad generic class for:

(1) Coating, impregnating or plastic compositions, especially those which set or harden to retain a given shape. Most of the compositions herein found are those which are capable of undergoing a change from a fluent to a nonfluent condition, or from a solid noncoherent form to a solid coherent form, which changes may be effected in any or more of the followings ways:

(a) By setting, e.g., concrete:

(b) By chemical reaction or conversion, e.g., viscose;

(c) By removal of solvents or vehicles, e.g., lacquers;

(d) By solidification from a molten state, e.g., asphalt or sulfur.

This class takes all such compositions unless more specifically provided for in other main classes, for which see the notes below under the heading “Coating or Plastic Compositions Elsewhere Classified”.

The term “coating” is used throughout the definitions and notes of this class to include “impregnating”.

(2) Materials or ingredients, not in themselves coating, impregnating or plastic compositions which are for use in such compositions and for which there is no provision elsewhere. Fillers or pigments for use in rubber, synthetic resins or paper are also included in this class.

(3) The line followed between sections 1 and 2 is, that patents broadly claiming coating or plastic compositions, wherein the only ingredients named do not by themselves form coating or plastic compositions, are classified in the appropriate subclasses under the heading “Materials or Ingredients”, unless the coating or plastic composition has a characteristic or property specifically provided for above. Thus “a paint comprising a specific pigment” is classified on the basis of the pigment because paints as such are not provided for; however, “an ink comprising a specific pigment” would be placed under “Inks” since inks are provided for as such.

(4) This class takes processes for preparing or making the compositions, materials, or ingredients classified herein, which processes are classified with the corresponding composition, material or ingredient. It does not, however, include processes which are clearly distinct from the composition, material or ingredient, and which are more specifically provided for elsewhere. See the appropriate notes below for the lines with the pertinent process classes.

(5) This class does not include patents which are limited to apparatus only, for which see the appropriate apparatus classes. Patents containing a claim to a composition and/or process of preparing same within this class and a claim to apparatus employed in the preparation of the composition are classified on the basis of the composition or process and cross-referenced to the appropriate apparatus class.

NOTES

It is the present office policy to classify article patents wherein the claims mention the article by name only and define the same only in terms of the composition or material of which it is composed, in the appropriate composition or material class. The collection of these patents and reclassification thereof into the composition or material classes is under way, and as a corollary thereto patents claiming a composition or material for an art use heretofore classified in the art classes are also being transferred to the appropriate composition or material class. The subsequent notes indicate the extent of this work as of June 1953 and as the remaining use classes are inspected, the article and use patents will be transferred into the appropriate composition or material class.

SECTION II - LINES WITH OTHER CLASSES AND WITHIN THIS CLASS

ARTICLES DEFINED BY COMPOSITION.

(A) The line in general between this class and the article classes is as follows: Where there are claims to the composition and claims to articles made therefrom, mentioned by name only with no inclusion of structure and defined only in terms of the composition, such patents are classified as originals in the appropriate composition subclasses of this class (106). Patents wherein all the claims are limited to a named article, mentioned by name only with no inclusion of structure and defined only in terms of the composition, are also classified as originals in this class except as noted in “B” below. Where there is claimed significant structure of the article, the patent is classified in the appropriate class pro-

viding for the same whether or not there is also present a claim to the composition (see Note C, below).

(B) See the References to Other Classes, below, for named articles defined only by compositions. Some of the article classes also provide for the composition, per se, when specialized for the article classified therein and these classes are indicated in the succeeding references to the article class and in the notes under the section "Coating or Plastic Compositions Elsewhere Classified".

(C) See References to Other Classes, below, for named articles wherein there is claimed significant structure of the article whether or not there are claims to the composition of which the article is composed:

COATING OR PLASTIC COMPOSITIONS ELSEWHERE CLASSIFIED.

(A) The rules for determining Class placement of the Original Reference (OR) for claimed chemical compositions are set forth in the Class Definition of Class 252 in the section LINES WITH OTHER CLASSES AND WITHIN THIS CLASS, subsection COMPOSITION CLASS SUPERIORITY, which includes a hierarchical ORDER OF SUPERIORITY FOR COMPOSITION CLASSES.

(1) Compositions are in general placed in the appropriate composition class whether or not they are claimed broadly or specifically as specialized for a use, property, or function provided for in some other main class, except as noted below under B.

(2) Compositions which are disclosed as having a plurality of uses, properties or functions provided for in different main classes and only a single use, property or function is claimed, are placed in the composition providing for such claimed use, property or function and cross-referenced to other classes for disclosed uses, properties or functions when desirable.

(3) A list of superiority of composition classes appears in the main class definition of Class 252, Compositions, Lines With Other Classes. This note in Class 252 explains classification of a generic composition with several disclosed uses.

The superiority list below is not intended as a complete list and will be expanded or added to as the relationship between other classes containing compositions and the above listed classes is determined.

504, Plant Protecting and Regulating Compositions.

424, Drug, Bio-Affecting and Body Treating Compositions.

71, Chemistry: Fertilizers.

149, Explosive and Thermic Compositions or Charges.

44, Fuel and Related Compositions.

148, Metal Treatment.

508, Solid Antifriction Devices, Materials Therefor, Lubricant or Separant Compositions for Moving Solid Surfaces, and Miscellaneous Mineral Oil Compositions.

252, Compositions (special uses or functions).

106, Compositions: Coating or Plastic.

51, Abrasive Tool Making Process, Material, or Composition.

520, Synthetic Resins or Natural Rubbers.

260, Chemistry of Carbon Compounds.

252, Compositions (nonspecial uses or functions).

426, Food or Edible Material: Processes, Compositions, and Products.

451, Abrading.

(B) For compositions elsewhere classified, see References to Other Classes, below.

MATERIAL OR INGREDIENTS.

See References to Other Classes, below, identified as material or ingredients classes.

PROCESSES OF PREPARING COMPOSITIONS.

(A) The character of compositions included within Class 106 is such that they are generally capable of being prepared in molds or on surfaces. Where the locus of the preparation is merely incidental to the making of the composition, and no significant molding or coating step is claimed, such processes are classified with the composition in this class (106).

(B) See References to Other Classes identified as for processes which include the preparation of coating or plastic compositions.

DEFINITIONS OF ORGANIC CHEMICAL TERMS

For terms such as “heterocyclic”, “oxo”, “oxy”, etc., see the Glossary of Class 260, Chemistry of Carbon Compounds.

SECTION III - REFERENCES TO OTHER CLASSES

SEE OR SEARCH CLASS:

8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, for compositions specialized for use as dyestuffs, and for compositions which (1) react with hide skin, feathers or animal tissues or (2) are specialized for use in the treatment of hides, skins, feathers and animal tissues and do not form a coating thereon. (for coating or plastic compositions elsewhere classified)

30, Cutlery, subclass 345 and 350 for cutting elements. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

44, Fuel and Related Compositions, for fuel compositions not specifically provided for in Classes 48, Gas: Heating and Illuminating and 196, Mineral Oils, and binders specialized for use in briquetting comminuted fuel. (for coating or plastic compositions elsewhere classified)

47, Plant Husbandry, subclass 1 for seed containing compositions and compositions for preserving cut plants. (for coating or plastic compositions elsewhere classified)

51, Abrasive Tool Making Process, Material, or Composition, for a composition specialized for use as an abrasive. Patents containing claims to the abrasive function as well as claims to a function or use specifically provided for in Class 106 (e.g., refractory) are placed in this class (106) as originals and cross-referenced to Class 51. (for coating or plastic compositions elsewhere classified)

55, Gas Separation, for filtering media. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

65, Glass Manufacturing, appropriate subclasses for glass working or treating; for the line between these classes, see the line note under the class definition of Class 65. (processes including preparation of coating or plastic compositions)

71, Chemistry: Fertilizers, for compositions of matter specialized for use as fertilizers. (for coating or plastic compositions elsewhere classified)

101, Printing, subclasses 127+ for stencils, subclasses 453+ for lithos:graphic printing plates, and subclass 473 for copying elements, per se. (named articles defined only by compositions)

101, Printing, subclass 368 and 398 for printing members or type. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

101, Printing, subclass 424 for anti-smut cleaners, utilizing detergent compositions. (for coating or plastic compositions elsewhere classified)

117, Single-Crystal, Oriented-Crystal, and Epitaxy Growth Processes; Non-Coating Apparatus Therefor, for processes and non-coating apparatus for growing therein-defined single-crystal of all types of materials, including inorganic or organic, and including those in the form of a coating. Coating apparatus is generally located in Class 118. (processes including preparation of coating or plastic compositions)

127, Sugar, Starch, and Carbohydrates, subclasses 29 through 33 for mixtures of sugars, starches and carbohydrates resulting from operations encompassed by said class. (for coating or plastic compositions elsewhere classified)

131, Tobacco, subclasses 352+ for tobacco compositions, subclasses 300+ for compositions employed in the treatment of tobacco, and subclasses 208, 219, 220, and 230 for compositions for smoking devices. (for compositions elsewhere classified)

131, Tobacco, subclass 359 for tobacco products and compositions, subclasses 219, 220 and 230 for smoking devices and compositions therefor and subclasses 331+ for composition of smoke separators or treaters, per se, disclosed for use with a tobacco user's appliance or article. (named articles defined only by compositions)

132, Toilet, subclass 93 for toothpicks. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

138, Pipes and Tubular Conduits. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

138, Pipes and Tubular Conduits, for for tubular conduits when there is no claim to the composition, per se. (named articles defined only by compositions)

148, Metal Treatment, for compositions specialized for use in the treatment of metal, particularly subclasses 240+ and 22+. The line between Class 106 and subclass 240+ of Class 148 in regard to coating compositions is as follows: If the coating composition reacts with the metal base whereupon the base supplies any ingredient of the coating formed thereon, such a composition is in Class 148, otherwise in this class (106).(for coating or plastic compositions elsewhere classified)

149, Explosive and Thermic Compositions or Charges, for compositions of matter specialized for uses or functions embraced within the scope of this class (149).(for coating or plastic compositions elsewhere classified)

162, Paper Making and Fiber Liberation, subclasses 100+ for fiber containing compositions which are formed, or intended to be formed by deposition from a liquid suspension. (for coating or plastic compositions elsewhere classified)

162, Paper Making and Fiber Liberation, subclasses 100+ for processes involving deposition of a fiber containing material from a liquid suspension. (processes including preparation of coating or plastic compositions)

181, Acoustics, subclass 294 for materials characterized by the particular sound absorbing material used to form the product. (named articles defined only by compositions)

188, Brakes, subclasses 250+ for brake elements. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

192, Clutches and Power-Stop Control, subclass 107 for clutches. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

196, Mineral Oils, for mineral oils, such as, for example, petroleum fractions, asphalt and all mixtures of any mineral oil with another mineral oil within the definition of Class 196, as well as processes of preparing, extracting, or purifying the same. (for materials or ingredients)

200, Electricity: Circuit Makers and Breakers, subclass 166 for electrical contacts. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

204, Chemistry: Electrical and Wave Energy, subclasses 291+ for electrode compositions and subclasses 295+ for diaphragm compositions limited to use in electrolytic apparatus. (named articles defined only by compositions)

204, Chemistry: Electrical and Wave Energy, appropriate subclasses for compositions prepared by electrical or wave energy only, subclasses 291+ for electrode compositions limited to use in electrolytic apparatus, and subclasses 295+ for diaphragm compositions limited to use in electrolytic apparatus. (for coating or plastic compositions elsewhere classified)

205, Electrolysis: Processes, Compositions Used Therein, and Methods of Preparing the Compositions, appropriate subclasses for compositions directed to use in electrolytic processes (e.g., electrolytic plating bath compositions are found in subclasses 80+, etc.). (named articles defined only by compositions)

205, Electrolysis: Processes, Compositions Used Therein, and Methods of Preparing the Compositions, appropriate subclasses for compositions directed to use in electrolytic processes (e.g., electrolytic plating bath compositions are found in subclasses 80+, etc.). (for coating or plastic compositions elsewhere classified)

206, Special Receptacle or Package, subclass 524.1 for containers with specified material therein, particularly subclass 524.5 for a container with caustic material content. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

208, Mineral Oils: Processes and Products, subclasses 4+ and 14+ for coating or plastic compositions containing as ingredients only mineral oils. (for coating or plastic compositions elsewhere classified)

209, Classifying, Separating, and Assorting Solids, appropriate subclass for processes of classifying solid materials, even though for the purpose of making plastic compositions, which are distinct from the composition. (processes including preparation of coating or plastic compositions)

210, Liquid Purification or Separation, subclasses 500.1+ for filters for use in liquid purification. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

210, Liquid Purification of Separation, subclasses 500.1+ for filters for use in liquid purification and compositions therefor. (named articles defined only by compositions)

215, Bottles and Jars, subclasses 200+ for closures. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

217, Wooden Receptacles, subclass 3 for linings claimed in combination with wood receptacles. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

219, Electric Heating, subclasses 145.1+ and 146.1+ for welding electrodes for arc or for gas welding. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

238, Railways: Surface Track, subclasses 84+ for railway ties, and subclass 150 for rails. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

241, Solid Material Comminution or Disintegration, subclasses 291+ for comminuting elements. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

241, Solid Material Comminution or Disintegration, subclasses 1 through 30 for comminuting processes and see section 2 of the class definition of that class for the line. (processes including preparation of coating or plastic compositions)

242, Winding, Tensioning, or Guiding, subclasses 615+ and 157.1+ for guides for directing indefinite length, running material. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

249, Static Molds, subclasses 134+ for a static mold comprising significant structure and composition thereof. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

252, Compositions, subclasses 62.51+ of Class 252 provides for magnets defined only by their composition and for compositions specialized and designed for use as magnetic materials. Subclasses 181.1+ and the classes specified in the Notes thereto, provide for compositions and materials for use as getters (e.g., a material designed to eliminate unwanted gases from a sealed envelope) and for materials designed to generate a gas or vapor within the envelope of an electric lamp or electronic tube. Subclasses 625+ provides for radio active materials. Subclasses 301.16 - 301.6 provide for luminescent materials. Subclass 478 provides for materials specialized for use as shields against X-ray and other similar radiations. Subclass 500 provides for compositions specialized for use as electrical conductors and emitters and such devices defined solely by their composition. Such compositions and devices include electron emissive compositions, electrodes, filaments, and shields for electric lamp and electric space discharge devices, resistances, brushes, contacts, switches and welding electrodes. Subclasses 570+ provide for a normally fluent dielectric composition. Solid dielectric compositions, including a mass of fluent solids are classified herein, when appropriate, or in the 520 Classes, Synthetic Resins, except in the case of a web or sheet impregnated with a defined fluent dielectric, which is classified in Class 252, subclass 567. (named articles defined only by compositions)

252, Compositions, is the generic class for compositions of matter. (1) Where a use, property or function provided for in Class 252 is claimed, the composition belongs in Class 252. See the notes to the main class definition of Class 252 for references to other classes having nonplastic or noncoating compositions: (2) See the reference to Class 252 in (1) Note, Part B, for the coating and plastic compositions included in Class 252. Patent discloses species, all of which belong in Class 523, subclasses 1+ and claims broadly a composition which is not limited to the subject matter of said classes, the patent is placed in Class 520 in the subclasses first appearing therein provided for the disclosed species. Patents containing composition claims differing in scope only, some of which standing alone, belong in Class 106, and some in Class 520 are placed as originals and cross-referenced to Class 106 when desirable. (for coating or plastic compositions elsewhere classified)

260, Chemistry of Carbon Compounds, its daughter Classes 530-570 and Class 585, Chemistry, Hydrocarbons for single carbon compounds, including mixtures of carbon compounds resulting from a reaction or synthesis provided for in said class, which are new, even though they have a claimed utility, property or function provided for in this class (106), and processes of preparing carbon compounds. Class 260, etc., includes compositions which contain definite chemical compounds of dyestuff or pigment compounds with metals. Carbons coloring compounds which are produced in the presence of a preformed substratum, wherein novelty is alleged to reside in the combination or in the amount, form or nature of the substratum, are in this class (106); however, where the substratum is synthesized simultaneously with the carbon compound, the product belongs in class 260 Classes 530-570 or Class 585. (for materials or ingredients)

264, Plastic and Nonmetallic Article Shaping or Treating: Processes, subclasses 219+ for processes within the class definition, including the step of making the mold (including mold making, per se), and subclasses 337+ pertaining to the use of particular mold materials. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

264, Plastic and Nonmetallic Article Shaping or Treating: Processes, for processes of molding or shaping compositions of matter which include significant molding or shaping operation. The line between this class (106) and Class 264 is as follows: Class 106 takes processes of making compositions within the class definition even though including the step of molding, when such step is claimed broadly. Broad references to extruding, spinning into a setting medium (without naming the medium) or sheeting in a claim to the preparation of a composition of matter, are considered broad molding steps. Also the statement that heat and pressure are used during the molding, whether or not specific temperatures or specific pressures are recited, is not considered sufficient of itself to take a patent claiming a process of preparing a composition out of this class (106). For a more detailed discussion of the line between Class 264 and the composition classes see the definition of Class 264. (processes including preparation of coating or plastic compositions)

266, Metallurgical Apparatus, subclass 280 for linings especially designed for use in metallurgical furnaces. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

266, Metallurgical Apparatus, subclasses 280+ for linings specially designed for use in metallurgical furnaces. (named articles defined only by compositions)

307, Electrical Transmission or Interconnection Systems, subclass 400 for a composition of this class having a permanent electric charge, that is, an electret. (named articles defined only by compositions)

310, Electrical Generator or Motor Structure, subclasses 252+ for electrical brushes. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

337, Electricity: Electrothermally or Thermally Actuated Switches, subclass 109, 137, 180, 329, 373, 399, and 413 for electrical contacts for use in electrothermal and thermal switches. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

338, Electrical Resistors, subclass 244, 245, 248, 250, 257, 262+, 269, and 275 for electrical resistors with a coated casing or a casing formed on and hardened on the resistors, and subclasses 308+ for resistors whose element is coated on a base. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

349, Liquid Crystal Cells, Elements and Systems, subclasses 182+ for a liquid crystal optical element with a specified composition. (for coating or plastic compositions elsewhere classified)

359, Optics: Systems (Including Communication) and Elements, subclasses 321+ for an optical modulator with significant composition, subclasses 490+ for polarizing by dichroic medium and subclass 500 for polarization by birefringent element of particular material. (for coating or plastic compositions elsewhere classified)

359, Optics: Systems (Including Communication) and Elements, subclasses 885+ for optical absorption filters. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

360, Dynamic Magnetic Information Storage or Retrieval, subclasses 131+ for magnetic records. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

361, Electricity: Electrical Systems and Devices, subclasses 271+ condensers. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

361, Electricity: Electrical Systems and Devices, subclasses 271+ for condensers including a dielectric composition, even though the dielectric composition is claimed, per se. (named articles defined only by compositions)

366, Agitating, subclasses 2+ for physical processes of mixing mortars and asphaltic and hydraulic cement concrete which are clearly distinct from the composition. (processes including preparation of coating or plastic compositions)

369, Dynamic Information Storage or Retrieval, subclasses 272+ for sound records with detail of information bearing structure. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

373, Industrial Electric Heating Furnaces, subclasses 74+ subclass 18 for arc furnace electrodes and subclasses 137, 155 and 164 for electrode furnace linings. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

384, Bearings, subclasses 276+ for sleeves, or liners. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

404, Road Structure, Process, or Apparatus, appropriate subclasses for the combination of a Class 106, composition (or process) with structure (or steps) peculiar to road building. See note to Class 106, under the class definition Class 404. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

404, Road Structure, Process, or Apparatus appropriate subclasses for the combination of a Class 106, composition (or process) with structure (or steps) peculiar to road building. See note to Class 106, under the class definition of Class 404. (processes including preparation of coating or plastic compositions)

420, Alloys or Metallic Compositions, appropriate subclasses for molds claimed solely in terms of the metal or alloy of which they are composed. (named articles defined only by compositions)

420, Alloys or Metallic Compositions, appropriate subclasses for compositions which contain a continuous phase of metal. (for coating or plastic compositions elsewhere classified)

423, Chemistry of Inorganic Compounds, for materials or ingredients which are a single inorganic compound and processes for their manufacture involving a chemical reaction. For the general line between Class 423 and the composition classes see the notes under subclass 265 of that class (423). (for materials or ingredients)

424, Drug, Bio-Affecting and Body Treating Compositions, appropriate subclasses for a composition specialized as a medicine or poison and especially subclasses 59 through 74 for a composition to be applied to a living body (e.g., sun tanning cream, lipstick, hair waving lotion, etc.). (for coating or plastic compositions elsewhere classified)

426, Food or Edible Material: Processes, Compositions, and Products, appropriate subclasses, especially subclasses 70+ for edible compositions including those intended for use in coating, impregnating or treating foods. (for coating or plastic compositions elsewhere classified)

427, Coating Processes. The line between Classes 106 and 427 is as follows: If a patent claims a coating composition and also claims a process of coating, the patent is classified in Class 427 if the process is "significant", and in Class 106 if the process is not "significant". For a definition of "significant" process see the class definition of Class 427. (processes including preparation of coating or plastic compositions)

428, Stock Material or Miscellaneous Articles. Except for subject matter classifiable in Class 428, subclasses 544+, the line between this class (106) and Class 428 is as follows: A patent containing a claim to a product classifiable in Class 428, but with no significant structural limitation recited, and a claim to a coating material of the Class 106 type, which material is included as at least part of the claimed product, it is classified in Class 106 on the basis of the coating material. If the patent also has a claim to a process of coating including a significant method step, the patent is classified in Class 428. Lines With Other Classes and Within This Class for the general relationship between Class 428 and the composition

classes. (processes including preparation of coating or plastic compositions)

428, Stock Material or Miscellaneous Articles, appropriate subclasses for a stock material product in the form of a single or plural layer web or sheet and particularly subclasses 98+ for a structurally defined web or sheet; subclass 221 for a web or sheet having a structurally defined element or component; subclasses 357+ for a coated or structurally defined element (e.g., strand, fiber, flake, or filament), or a mass thereof and subclasses 411+ for a composite web or sheet in which the composition of at least one layer is specified. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

429, Chemistry: Electrical Current Producing Apparatus, Product, and Process, for compositions of matter limited to use in electrochemical batteries, especially subclasses 188+ for electrolytic compositions, and subclasses 247+ for separator compositions. (for coating or plastic compositions elsewhere classified)

429, Chemistry: Electrical Current Producing Apparatus, Product, and Process, subclasses 247+ for battery separator which may be mentioned by name only. (named articles defined only by compositions)

430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, appropriate subclasses for radiation sensitive and post imagery compositions. (named articles defined only by compositions)

430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, appropriate subclass for articles provided for by the class. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

430, Radiation Imagery Chemistry: Process, Composition, or Product Thereof, for compositions of matter which are specialized for use as a radiation image sensitizing agent and post imaging treating agent. (for coating or plastic compositions elsewhere classified)

432, Heating, subclasses 1+ for a residual process of heating or calcining an object or material which is clearly distinct from the composition. (processes including preparation of coating or plastic compositions)

433, Dentistry, subclasses 167+ for an artificial tooth or denture; and subclasses 215+ for a method of restoring a natural tooth by using a specific coating or plastic composition. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

452, Butchering, subclass 72 for composition for use in removing feathers and hair from fowls and animals in the preparation of the carcasses for food. (for coating or plastic compositions elsewhere classified)

492, Roll or Roller, subclasses 53+ and 57+ for the disclosure of specific compositions of a roll, per se, not elsewhere provided for. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

492, Roll or Roller, subclasses 53+ and 57+ for the disclosure of specific compositions of a roll, per se, not elsewhere provided for. (named articles defined only by compositions)

501, Composition: Ceramic, for articles defined solely by composition, which composition is a ceramic material. (for named articles defined only by compositions)

504, Plant Protecting and Regulating Compositions, for compositions of matter specialized for use as plant catalysts or stimulants. (for coating or plastic compositions elsewhere classified)

508, Solid Antifriction Devices, Materials Therefor, Lubricant or Separant Compositions for Moving Solid Surfaces, and Miscellaneous Mineral Oil Compositions is the generic class for lubricants. As between Class 106 and Class 508, the following line is followed. Where the composition is disclosed as a lubricant, whether or not other uses are disclosed, the composition belongs in Class 508 if claimed only broadly or if claimed as a lubricant. (for coating or plastic compositions elsewhere classified)

508, Solid Antifriction Devices, Materials Therefor, Lubricant or Separant Compositions for Moving Solid Surfaces, and Miscellaneous Mineral oil Compositions, for lubricant packs and compositions therefor, particularly subclasses 100+ for bearings or guides mentioned by name only and defined solely by the composition of which they are composed. (for named articles defined only by compositions)

520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 523, subclasses 130+ for a composition having utility in consolidating a formation in a well or in cementing a well or to processes of preparing said composition and Class 524, subclasses 2+

for a water settable inorganic composition containing a synthetic resin or natural rubber. (for named articles defined only by compositions)

588, Hazardous or Toxic Waste Destruction or Containment, subclass 257 for methods of containing hazardous or toxic waste in a Class 106 composition. (processes including preparation of coating or plastic compositions)

602, Surgery: Splint, Brace, or Bandage, subclasses 5+ for splints. (class for named articles with claimed significant structure of the article whether or not there are claims to article's composition)

SUBCLASSES

1.05 Metal-depositing composition or substrate-sensitizing compositions for metal-depositing compositions:

Coating or plastic compositions from which metal is deposited as a coating, usually by chemical precipitation.

(1) Note. Included in this subclass are metal-coating compositions (metalization) for coating of metallic and nonmetallic substrates by processes such as electroless metal-deposition process, hot dipping (tinplate, galvanizing), metal spraying, electrophoresis, vacuum or vapor deposition, oxide reduction, cementation, etc.

(2) Note. Each of the subclasses 1.05, 1.11-1.19, and 1.21-1.29 provide for metal-coating compositions other than subclass 1.11, which is directed to compositions for activating or sensitizing substrates (metal or nonmetal), for subsequent metal coating with metal-containing compositions of subclasses 1.05, 1.12-1.19 and 1.21-1.29. Activating or sensitizing compositions are generally coupled to the electroless metal-deposition process and compositions therefrom.

SEE OR SEARCH CLASS:

148, Metal Treatment, for metal treating of base metals to alter their physical or chemical properties.

204, Chemistry: Electrical and Wave Energy, subclasses 291+ for electrode compositions and subclasses 295+ for diaphragm compositions limited to use in electrolytic apparatus.

205, Electrolysis: Processes, Compositions Used Therein, and Methods of Preparing the Compositions, subclasses 80+ for an electrolytic coating process or a composition used therefor.

252, Compositions, subclasses 181.1+ for compositions and materials for use as getters for electric lamps, electric space-discharge devices and similar evacuation of gas-filled containers or for generating a gas or vapor within the containers of an electric lamp, and electric space-discharge device or similar containers. The getter material or gas or vapor generated is sometimes a metal and is intended to be deposited as a coating upon the walls or other parts of the lamp or discharge device.

427, Coating Processes, including electroless processes of metal consisting of metal or nonmetal substrates.

1.11 Sensitizing composition:

This subclass is indented under subclass 1.05. Subject matter which is directed to compositions for activating or sensitizing substrates (metal or nonmetal) which art to be subsequently subjected to metal-coating compositions generally using the electroless metal-deposition process.

1.12 Metal-depositing composition contains mixtures of elemental metal and a metal compound other than solely as a Group IA metal compound:

This subclass is indented under subclass 1.05. Subject matter involving a metal-depositing composition containing a mixture of elemental metal and a metal compound and wherein the metal portion of said compound contains a metal other than solely as a Group IA (Li, Na, K, Rb, Cs, Ra) metal.

1.13 Elemental metal is a Group IB (Cu, Ag, Au) Metal:

This subclass is indented under subclass 1.12. Subject matter wherein the elemental metal is a Group IB (Cu, Ag, Au) metal.

1.14 Elemental metal is Ag:

This subclass is indented under subclass 1.13. Subject matter wherein the elemental metal is silver (Ag).

1.15 Elemental metal is a noble metal of Group VIII (Ru, Rh, Pd, Os, Ir, Pt):

This subclass is indented under subclass 1.12. Subject matter wherein the elemental metal is a noble metal of Group VIII (Ru, Rh, Pd, Os, Ir, Pt).

1.16 Elemental metal is a Group IIB (Zn, Cd, Hg) metal:

This subclass is indented under subclass 1.12. Subject matter wherein the elemental metal is a metal of Group IIB (Zn, Cd, Hg).

1.17 Elemental metal is Zn:

This subclass is indented under subclass 1.16. Subject matter wherein the elemental metal is zinc (Zn).

1.18 Metal-depositing composition contains elemental metal of Group IB (Cu, Ag, Au):

This subclass is indented under subclass 1.05. Subject matter involving a metal-coating composition containing an elemental metal of Group IB (Cu, Ag, Au).

1.19 Elemental metal is Ag:

This subclass is indented under subclass 1.18. Subject matter wherein the elemental metal is silver (Ag).

1.21 Metal composition contains elemental noble metal of Group VIII (Ru, Rh, Pd, Os, Ir, Pt):

This subclass is indented under subclass 1.05. Subject matter involving a metal-coating composition containing an elemental noble metal of Group VIII (Ru, Rh, Os, In, Pt).

1.22 Metal-depositing composition contains mixtures of metal compounds other than solely as Group IA metal compounds. e.g., electroless:

This subclass is indented under subclass 1.05. Subject matter wherein the metal-depositing composition contains mixtures of metal compounds and wherein at least two metal compounds contain metal atoms other than Group IA metal compounds generally used in the electroless metal deposition process.

SEE OR SEARCH THIS CLASS, SUBCLASS:

1.11, for activating or sensitizing substrates for metalizing said substrates with metal-containing compositions by the electroless metal deposition process.

SEE OR SEARCH CLASS:

427, Coating Processes, for a process of coating substrates by an electroless metal-deposition process.

1.23 At least one metal is a Group IB (Cu, Ag, Au) metal:

This subclass is indented under subclass 1.22. Subject matter wherein at least one metal atom of said mixture of metal compounds is a Group IA (Cu, Ag, Au) metal atom.

1.24 At least one metal is a noble metal of a Group VIII (Ru, Rh, Pd, Os, Ir, Pt) metal:

This subclass is indented under subclass 1.22. Subject matter wherein at least one metal atom of said mixture of metal compounds is a noble metal of Group VIII (Ru, Rh, Pd, Os, Ir, Pt).

1.25 Metal-depositing composition contains polyvalent metal compound:

This subclass is indented under subclass 1.05. Subject matter wherein a metal-depositing composition contains a polyvalent metal compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:

1.11, for sensitizing or activating compositions for substrates to be subsequently treated with a polyvalent metal-depositing composition.

1.26 Group IB (Cu, Au) metal:

This subclass is indented under subclass 1.25. Subject matter wherein the polyvalent metal portion of said compound is a polyvalent metal of Group IB (Cu, Au).

1.27 Group VIII metal:

This subclass is indented under subclass 1.25. Subject matter wherein the polyvalent metal portion of said compound is a polyvalent metal of Group VIII (Fe, Co, Ni).

1.28 Group VIII noble metal (Ru, Rh, Pd, Os, Ir, Pt):
This subclass is indented under subclass 1.27. Subject matter wherein the polyvalent metal is a noble metal of Group VIII (Ru, Rh, Pd, Os, Ir, Pt).

1.29 Group IIB (Zn, Cd, Hg) metal:
This subclass is indented under subclass 1.25. Subject matter wherein the polyvalent metal is a Group IIB (Zn, Cd, Hg) metal atom.

2 Coating or plastic compositions specially designed for use in the prevention of the adherence of a coating material to a surface.

(1) Note. This subclass includes anti-smut compositions.

SEE OR SEARCH CLASS:
101, Printing, subclass 130 and subclasses 135 to 146 for apparatus for printing dependent on the use of ink repellent surfaces, subclasses 450+ for processes of printing, subclasses 453+ for lithos:graphic printing plates, subclasses 463+ for lithos:graphic plate making, and subclasses 416.1+ for anti-smut devices.
425, Plastic Article or Earthenware Shaping or Treating: Apparatus, subclasses 90+ for plastic or fluent material molding apparatus combined with means to apply a parting (i.e., repellent, etc.) material, many of which disclose specifics of the composition.

3 Coating or plastic compositions, known as polishes, specially designed for use in producing a luster or sheen on a surface which may be applied by rubbing or burnishing. This subclass and indented subclasses include furniture polish, shoe polish, floor polish, etc.

SEE OR SEARCH CLASS:
15, Brushing, Scrubbing, and General Cleaning, subclasses 104.93+ for fabrics coated or saturated with a polish for use as wipers, daubers or polishers.
51, Abrasive Tool Making Process, Material, or Composition, for a polishing composition wherewith polishing is accomplished solely by an abradant.
510, Cleaning, Compositions for Solid Surfaces, Auxiliary Compositions Therefor, or Processes of Preparing the Compositions, appropriate subclasses for cleaning compositions which include a particulate polishing component or which deposit a polish-like coating component on the cleaned surface (e.g., subclass 256, 400, etc.).
520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 523, subclass 167 for a composition containing a synthetic resin or natural rubber. having utility in the manufacturing or repairing of shoes or to processes of preparing said composition.

4 This subclass is indented under subclass 3. Compositions in the preparation of which a protein is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.53+, 124+, 614+, and 645+, for other compositions containing proteins or derivatives.

5 This subclass is indented under subclass 3. Compositions in the preparation of which a carbohydrate or reaction product thereof is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.36+, 31.69+, 126+, 139+, 150, 151, 157, 158, 162+, 617, 687, 729+, 779+, and 804+, for other compositions containing carbohydrates or derivatives.

6 This subclass is indented under subclass 3. Compositions in the preparation of which is natural resin or reaction product thereof is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
16, 31.4, 31.72, 133, 144, 152, 156, 160, 172, 173.1, 200, 207, 212, 216, 218+,

622, 660, for other compositions containing natural resin or derivative.

7 This subclass is indented under subclass 6. Compositions in the preparation of which a fatty oil is employed.

(1) Note. The term "varnish" when broadly used is presumed to include a mixture of natural resin with a drying oil, and patents drawn to compositions containing "varnish" recited broadly are classified upon this basis.

SEE OR SEARCH THIS CLASS, SUBCLASS:

17, 31.34, 172, and 220+, for other compositions containing a natural resin or derivative with a fatty oil.

8 This subclass is indented under subclass 3. Compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

18, 31.34+, 131, 132, 142, 143, 159, 171, 172, 199, 206, 211, 215, 219+, 243+, 620+, and 661+, for other compositions containing a fat, fatty oil, fatty oil acid or salt thereof.

9 This subclass is indented under subclass 8. Compositions in the preparation of which a fatty oil is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

18, 31.34, 132, 143, 159, 171, 199, 206, 211, 215, 220+, 244+, 620+, and 661+, for other compositions containing fatty oil.

10 This subclass is indented under subclass 3. Compositions in the preparation of which a wax, a bituminous material or tarry residue is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31.29, 134, 145, 152, 156, 160, 191, 201, 202, 207, 212, 216, 224, 225, 230, 231, 232+, 245, 246+, 269, 270+, 273.1, 622, and 660, for other compositions containing wax, bituminous material or tarry residue.

SEE OR SEARCH CLASS:

510, Cleaning Compositions for Solid Surfaces, Auxiliary Compositions Therefor, or Processes of Preparing the Compositions, appropriate subclasses for cleaning compositions which include wax as one of the components (e.g., subclasses 201+, 222, 347, etc.), although the wax may or may not be retained on the cleaned substrate.

11 This subclass is indented under subclass 3. Compositions in the preparation of which a hydrocarbon is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31.88, 191, 227, 234, 239, 265, 267, and 285, for other compositions containing hydrocarbons.

12 Coating or plastic compositions specially designed for saturating or indurating solid base material.

(1) Note. Compositions found in this subclass are those which do not, by themselves, usually form hard, adherent films but exert a hardening or indurating action on the base.

(2) Note. Most of the compositions in this subclass are compositions for saturating and hardening siliceous and calcareous substances, e.g., concrete.

SEE OR SEARCH CLASS:

252, Compositions, subclasses 601+ for impregnating compositions which exert a fireproofing action.

424, Drug, Bio-Affecting and Body Treating Compositions, appropriate subclass for a composition, biocidal or repellent to pest life, i.e., insects, rodents, microorganisms, etc. and which may saturate a substrate such as paper, wood or textile, etc.

13 Coating or plastic compositions specialized for use in preventing the formation of a fog, frost

or ice on a surface, usually the surface of a window.

SEE OR SEARCH CLASS:

15, Brushing, Scrubbing, and General Cleaning, subclasses 104.93+ for fabrics impregnated with a frost preventing composition to be used as wipers, daubers, or polishers.

252, Compositions, subclass 70 for other frost preventing compositions.

520, Synthetic Resins or Natural Rubbers, particularly Class 523, subclass 169 for a composition containing a synthetic resin or natural rubber having utility to preserve visibility through a windshield or other optical device by preventing the buildup of fog or by rendering the surface hydrophobia, thereby causing the surface to repel water or to processes of preparation thereof.

14.05 Corrosion inhibiting coating composition:
This subclass is indented under subclass 1.05. COATING OR PLASTIC COMPOSITIONS (unnumbered subclass preceding ...) specifically designed for inhibiting corrosion of metal other than mere exclusion of air or other corrosive influences.

SEE OR SEARCH CLASS:

148, Metal Treatment, subclasses 240+ for chemical modification of a metal involving the use of a corrosion inhibiting composition.

252, Compositions, subclasses 387+ for preservative agents and compositions containing anticorrosion agents.

422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, subclasses 7+ for processes of preserving metals or metallic surfaces against corrosion by maintaining the environment noncorrosive; and subclasses 14+ wherein the environment is water.

427, Coating Processes, for coating substrates using a composition containing a corrosion inhibitor.

428, Stock Material or Miscellaneous Articles, coated with a composition containing a corrosion inhibitor.

14.11 Contains water:
This subclass is indented under subclass 14.05. Subject matter wherein the corrosion inhibiting composition contains water.

14.12 Phosphorus material:
This subclass is indented under subclass 14.11. Subject matter wherein the corrosion inhibiting agent contains a phosphorus atom.

14.13 Carboxylic acid, ester, alcohol or sulfur or metal derivative:
This subclass is indented under subclass 14.11. Subject matter wherein the corrosion inhibiting composition contains a carboxylic acid, ester, alcohol, sulfur, or metal derivative.

14.14 Inorganic material other than water:
This subclass is indented under subclass 14.13. Subject matter wherein said composition also contains an inorganic material other than water, e.g., inorganic salts, inorganic fillers, metal, sulfur, etc.

14.15 Organic nitrogen-containing material, e.g., amine, amide, etc.:
This subclass is indented under subclass 14.11. Subject matter wherein the corrosion inhibiting composition contains an organic nitrogen-containing material, e.g., organic amine, amide, etc.

14.16 Heterocyclic nitrogen-containing material:
This subclass is indented under subclass 14.15. Subject matter wherein the organic nitrogen-containing material contains at least one nitrogen atom in a hetero ring compound, e.g., pyridine or pyrrolidone-type compound, etc.

14.17 Inorganic material other than water:
This subclass is indented under subclass 14.16. Subject matter wherein said composition also contains an inorganic material other than water.

14.18 Amine salt of carboxylic acid:
This subclass is indented under subclass 14.15. Subject matter wherein the corrosion inhibiting composition contains an amine salt of a carboxylic acid, e.g., triethanolamine oleate, etc.

14.21 Inorganic material or elemental component thereof, e.g., s, metal, etc.:
This subclass is indented under subclass 14.11. Subject matter wherein said corrosion inhibitor coating composition contains an inorganic material.

14.22 Contains animal, vegetable, fish oil or a fraction or derivative thereof:
This subclass is indented under subclass 14.05. Subject matter wherein the corrosion inhibiting composition contains an animal, vegetable or fish oil or fraction or a derivative thereof.

14.23 Carboxylic acid, ester, alcohol or metal or sulfur or amine or amide derivative thereof:
This subclass is indented under subclass 14.22. Subject matter wherein the corrosion inhibiting composition contains a carboxylic acid, ester, alcohol, sulfur, metal, amine, or amide derivative.

14.24 Carboxylic acid, ester, or amine or amide derivative:
This subclass is indented under subclass 14.23. Subject matter wherein the corrosion inhibiting composition contains a carboxylic acid, ester, amine, or amide derivative of said carboxylic acid.

14.25 Inorganic material or elemental component thereof:
This subclass is indented under subclass 14.22. Subject matter wherein a component of said corrosion inhibiting composition contains an inorganic material or elemental component thereof.

14.26 Contains petroleum oil or a fraction thereof:
This subclass is indented under subclass 14.05. Subject matter wherein the corrosion inhibiting composition contains a petroleum oil or liquid fractions thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:
14.34, for solid petroleum wax is part of a corrosion inhibiting composition.

14.27 Carboxylic acid, ester, alcohol or sulfur or metal derivative thereof:
This subclass is indented under subclass 14.26. Subject matter wherein the corrosion inhibiting composition contains a carboxylic acid, ester, alcohol, sulfur, or metal derivative thereof.

14.28 Metal salt of carboxylic acid:
This subclass is indented under subclass 14.27. Subject matter wherein the corrosion inhibiting composition contains a metal salt of a carboxylic acid, e.g., sodium stearate, etc.

14.29 Metal salt of sulfonic acid:
This subclass is indented under subclass 14.27. Subject matter wherein the corrosion inhibiting composition contains a metal salt of a sulfonic acid, e.g., Na petroleum sulfonate, etc.

14.31 Organic nitrogen-containing material, e.g., amine, amide, etc.:
This subclass is indented under subclass 14.26. Subject matter wherein the corrosion inhibiting composition contains an organic nitrogen-containing material, e.g., amine, amide, etc.

14.33 Inorganic material or elemental component thereof, e.g., S, metal, etc.:
This subclass is indented under subclass 14.26. Subject matter wherein a component of said petroleum oil-containing composition is an inorganic material or elemental component thereof.

14.34 Contains wax, bitumen, asphalt, gum, natural resin, varnish, lacquer, or paint:
This subclass is indented under subclass 14.05. Subject matter wherein the corrosion inhibiting composition or a component thereof contains wax, bitumen, asphalt, gum, natural resin, varnish, lacquer, or paint.

SEE OR SEARCH THIS CLASS, SUBCLASS:
14.26, for a liquid petroleum fraction which is part of a corrosion inhibiting composition.

14.35 Carboxylic acid, ester, alcohol or sulfur or metal derivative:
This subclass is indented under subclass 14.34. Subject matter wherein the corrosion inhibiting composition contains a carboxylic acid, ester, alcohol, sulfur, or metal derivative thereof.

14.36 Metal salt of carboxylic acid:
This subclass is indented under subclass 14.35. Subject matter wherein the corrosion inhibiting composition contains a metal salt of a carboxylic acid.

14.37 Organic nitrogen-containing material:
This subclass is indented under subclass 14.34. Subject matter wherein the corrosion inhibiting composition contains a nitrogen-containing material, e.g., amine, amide, etc.

14.38 Organic sulfur-containing material:
This subclass is indented under subclass 14.34. Subject matter wherein the corrosion inhibiting composition contains a sulfur-containing material, e.g., organic sulfide, sulfonate, etc.

14.39 Inorganic material or elemental component thereof:
This subclass is indented under subclass 14.34. Subject Matter wherein a component of said composition is an inorganic material or elemental component thereof.

14.41 Contains mixture of at least two organic compounds:
This subclass is indented under subclass 14.05. Subject matter wherein the corrosion inhibiting coating compositions contains at least two organic compounds.

14.42 Organic nitrogen-containing material:
This subclass is indented under subclass 14.41. Subject matter wherein at least one of the organic compounds is an organic nitrogen-containing compound, e.g., amine, amide, etc.

14.43 Organic sulfur-containing material:
This subclass is indented under subclass 14.41. Subject matter wherein at least one of the organic compounds is an organic sulfur-containing compound.

14.44 Contains mixture of organic material and at least one inorganic material or elemental component thereof:
This subclass is indented under subclass 14.05. Subject matter wherein the corrosion inhibiting coating composition contains at least one organic material and at least one inorganic material or elemental component thereof.

14.45 Elemental S or inorganic sulfur-containing compound:
This subclass is indented under subclass 14.44. Subject matter wherein the inorganic material is elemental sulfur or an inorganic sulfur-containing compound, e.g., CS_2, Na_2S, etc.

14.5 Coating or plastic compositions specially designed for producing sheets or surfaces for receiving the negative design in copy printing and usually serving as a member for which to print a large number of copies.

SEE OR SEARCH THIS CLASS, SUBCLASS:
311, and other appropriate subclasses below, for duplicator fluids, that is, solvents which may be applied to the hectograph surface or the copy sheet.

SEE OR SEARCH CLASS:
101, Printing, subclass 131 for apparatus employing copy compositions; subclass 468 for hectographs and processes of use.
427, Coating Processes, subclass 144 for processes of applying a uniform coating to a base disclosed as useful in making hectos:graphic copying surfaces.

15.05 Contains fireproofing or biocidal agent:
This subclass is indented under subclass 1.05. COATING OR PLASTIC COMPOSITIONS (unnumbered subclass preceding ...) containing an agent or material specifically designed to render the coating or plastic composition resistant to the effects of fire or unwarranted organisms.

(1) Note. Patents in this area have been placed away into the first appearing subclass of the classification schedule that provides for any part of the fireproofed

or biocidal containing plastic composition. No attempt has been made to classify on the particular agent in the coating or plastic composition which may provide the desired fireproofing or biocidal effect.

(2) Note. Included herein are repellants, biocides, biostats, etc.

(3) Note. The organisms protected against may be microscopic or macroscopic.

SEE OR SEARCH CLASS:

252, Compositions, subclasses 2+ for fire-extinguishing compositions; and subclass 8.1 for fireproofing compositions.

424, Drug, Bio-Affecting and Body Treating Compositions, for a pest repelling composition, per se, and for certain coated substrates wherein the substrate functions as an applicator or carrier for the composition and wherein the general intent is to provide a pesticidal or pest-repelling effect rather than a means to protect the carrier or substrate.

428, Stock Material or Miscellaneous Articles, appropriate subclasses for a stock material product in the form of a single layer having significant structure, or plural layers webs or sheets; and especially subclasses 920+ for a cross-reference art collection product which is resistant against plant or animal attack.

520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 523, subclass 122 for a composition containing a synthetic resin or natural rubber and an ingredient which prevents the commencement of biocidal deterioration from fungi, bacteria, or other organisms; and subclass 179 for a composition containing a synthetic resin or natural rubber and having utility as an ablative or intumescent coating composition or to processes of preparing said compositions.

16 This subclass is indented under subclass 15. Compositions in the preparation of which a natural resin or derivative is employed.

(1) Note. See this class, the subclasses including “natural resin or derivative” or “resinous material” in the titles thereof, for other compositions containing natural resin or derivatives.

17 This subclass is indented under subclass 16. Compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

(1) Note. See this class, the subclasses including “natural resin or derivative with fat, fatty oil, fatty oil acid or salt thereof” in the titles thereof for other compositions containing natural resin or derivatives and a fat, fatty- oil, fatty oil acid or salt thereof.

18 This subclass is indented under subclass 15. Compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

(1) Note. See this class, subclasses including “fat, fatty oil, fatty oil acid or salt thereof” in the titles thereof for other compositions containing a fat, fatty oil, fatty oil acid or salt thereof.

18.11 Contains fireproofing agent:
This subclass is indented under subclass 15.05. Subject matter wherein the coating or plastic composition contains a specific material which renders it resistant to fire.

18.12 Silicon containing:
This subclass is indented under subclass 18.11. Subject matter wherein the coating or plastic composition contains a silicon-containing material.

18.13 Boron containing:
This subclass is indented under subclass 18.11. Subject matter wherein the coating or plastic composition contains a boron-containing material.

18.14 Phosphorus containing:
This subclass is indented under subclass 18.11. Subject matter wherein the coating or plastic composition contains a phosphorus-containing material.

18.15 Nitrogen-containing phosphorus compound:
This subclass is indented under subclass 18.14. Subject matter wherein phosphorus is in the form of phosphorus compound containing a nitrogen atom.

18.16 Inorganic compound contains a phosphorus and a nitrogen atom:
This subclass is indented under subclass 18.15. Subject matter wherein the phosphorus-containing nitrogen compound is inorganic in nature.

18.17 Contains phosphorus directly bonded to nitrogen:
This subclass is indented under subclass 18.15. Subject matter wherein the phosphorus-containing nitrogen compound has at least one nitrogen atom directly bonded to a phosphorus atom.

18.18 Phosphorus compound is organic:
This subclass is indented under subclass 18.14. Subject matter wherein the phosphorus is in the form of an organic compound.

18.19 Phosphorus compound which is organic contains halogen:
This subclass is indented under subclass 18.18. Subject matter wherein the organic phosphorus compound contains at least one halogen atom.

18.2 With halogen-containing compound:
This subclass is indented under subclass 18.18. Subject matter wherein the organic phosphorus compound is in admixture with a halogen-containing compound.

18.21 Nitrogen-containing organic compound:
This subclass is indented under subclass 18.11. Subject matter wherein the coating or plastic composition contains an organic compound which has at least one nitrogen atom therein.

18.22 Nitrogen compound contains a sulfur atom:
This subclass is indented under subclass 18.21. Subject matter wherein the organic nitrogen compound contains at least one sulfur atom.

18.23 Elemental sulfur or sulfur-containing organic compound:
This subclass is indented under subclass 18.11. Subject matter wherein the coating or plastic composition contains sulfur in elemental form or as part of a sulfur-containing organic compound.

18.24 Halogen-containing organic compound:
This subclass is indented under subclass 18.11. Subject matter wherein the coating or plastic composition contains a halogen-containing organic compound.

18.25 With at least one inorganic material which is other than water:
This subclass is indented under subclass 18.24. Subject matter wherein the organic halogen-containing compound is in admixture with at least one inorganic material, and wherein when water is present there is additionally present a different inorganic material.

18.26 Metal-containing material:
This subclass is indented under subclass 18.11. Subject matter wherein the coating or plastic composition contains at least one metal atom-containing material.

18.27 Group IIB metal atom (Zn, Cd, Hg):
This subclass is indented under subclass 18.26. Subject matter wherein a Group IIB metal atom (Zn, Cd, Hg) is present.

18.28 Group VA metal atom (As, Sb, Bi):
This subclass is indented under subclass 18.26. Subject matter wherein a Group VA metal atom (As, Sb, Bi) is present.

18.29 Wax containing:
This subclass is indented under subclass 15.05. Subject matter wherein the coating or plastic composition contains a wax.

(1) Note. The wax may be of any origin.

18.30 Boron containing:
This subclass is indented under subclass 15.05. Subject matter wherein the coating or plastic composition contains a boron-containing material.

18.31 Phosphorus containing:
This subclass is indented under subclass 15.05. Subject matter wherein the coating or plastic composition contains a phosphorus-containing material.

18.32 Nitrogen-containing compound:
This subclass is indented under subclass 15.05. Subject matter wherein the coating or plastic composition contains a nitrogen-containing compound.

18.33 Nitrogen compound contains a sulfur atom:
This subclass is indented under subclass 18.32. Subject matter wherein the nitrogen compound contains at least one sulfur atom.

18.34 Elemental sulfur or sulfur-containing organic compound:
This subclass is indented under subclass 15.05. Subject matter wherein the coating or plastic composition contains sulfur in elemental form or as part of a sulfur-containing organic compound.

18.35 Halogen-containing organic compound:
This subclass is indented under subclass 15.05. Subject matter wherein the coating or plastic composition contains a halogen-containing organic compound.

18.36 Group IIB metal containing (Zn, Cd, Hg):
This subclass is indented under subclass 15.05. Subject matter wherein the coating or plastic composition contains at least one Group II metal atom (Zn, Cd, Hg).

31.01 Marking:
This subclass is indented under the class definition. Coating or plastic compositions which are specialized for use in producing characters and indicia by means of marking, writing, printing, etc.

(1) Note. Search appropriate subclasses for similar compositions not designed for use as marking compositions.

SEE OR SEARCH CLASS:
401, Coating Implements With Material Supply, subclasses 49+ for pencils wherein significant structure of the pencil is claimed
520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 523, subclass 164 for a composition containing a synthetic resin or natural rubber having utility as the writing material in a lead pencil or crayon or to processes of preparing said composition.

31.02 Odor masked, odor reduced, or perfumed compositions:
This subclass is indented under subclass 31.01. Coating or plastic compositions which contain components which are odor masking, odor reducing, or perfuming.

SEE OR SEARCH CLASS:
422, Chemical Apparatus and Process Disinfecting, Deodorizing, Preserving, or Sterilizing, subclass 5 for deodorizing process.
512, Perfume Compositions, for perfume compositions, per se.

31.03 Composition for marking live animal or plant, or for marking animal derived products (e.g., animal skins, etc.):
This subclass is indented under subclass 31.01. Coating or plastic compositions used for marking living animals or plants, or for marking animal derived products.

31.04 Reflecting composition for marking pavement or sign:
This subclass is indented under subclass 31.01. Reflecting coating or plastic compositions for marking pavement or signs.

31.05 Composition for marking an inorganic settable or ceramic object (e.g., for marking cement or glass, etc.):
This subclass is indented under subclass 31.01. Coating or plastic compositions for marking an inorganic settable or ceramic object.

31.06 Composition for marking metal or metal product:
This subclass is indented under subclass 31.01. Coating or plastic composition for marking metal or metal products.

31.07 Indelible crayon:
This subclass is indented under subclass 31.01. Coating or plastic compositions used as crayon, whose markings are indelible.

31.08 Wax containing:
This subclass is indented under subclass 31.07. Coating or plastic compositions containing wax.

SEE OR SEARCH THIS CLASS, SUBCLASS:
- 31.1, for erasable crayon composition containing wax.
- 31.12, for pencil lead compositions containing wax.
- 31.29, for inks, containing organic dye, that also are the hot melt type or wax-containing.
- 31.61, for inks containing pigments, that also are the hot melt type or wax-containing.

31.09 Erasable crayon (i.e., washable or removable crayon):
This subclass is indented under subclass 31.01. Coating or plastic compositions used as crayon whose markings are erasable (i.e., washable or removable)

31.1 Wax containing:
This subclass is indented under subclass 31.09. Coating or plastic compositions containing wax.

SEE OR SEARCH THIS CLASS, SUBCLASS:
- 31.08, for indelible crayon compositions containing wax.
- 31.12, for pencil lead compositions containing wax.
- 31.29, for inks, containing organic dye, that also are the hot melt type or wax-containing.
- 31.61, for inks, containing pigments, that also are the hot melt type or wax-containing.

31.11 Pencil leads:
This subclass is indented under subclass 31.01. Coating or plastic compositions used as pencil leads.

31.12 Wax containing:
This subclass is indented under subclass 31.11. Coating or plastic compositions containing wax.

SEE OR SEARCH THIS CLASS, SUBCLASS:
- 31.08, for indelible crayon compositions containing wax.
- 31.1, for erasable crayon compositions containing wax.
- 31.29, for inks, containing organic dye, that also are the hot melt type or wax-containing.
- 31.61, for inks, containing pigments, that also are the hot melt type or wax-containing.

31.13 Inks:
This subclass is indented under subclass 31.01. Coating or plastic compositions specially designed for use as inks to be used for producing characters, by means of writing, printing, or marking.

SEE OR SEARCH CLASS:
- 8, Bleaching and Dyeing: Fluid Treatment and Chemical Modification of Textiles and Fibers, subclasses 445+ for textile printing pastes.
- 206, Special Receptacle or Package, subclass 5 for infusion packages or receptacles containing ink.
- 401, Coating Implements With Material Supply, subclasses 209+ for the combination of a ballpoint pen and ink.
- 516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclass 901 for a collection of art under the Class definition which discloses subject matter relating to a colloid system comprising substantially pure elemental Carbon in one of its various forms such as graphite, lamp black, carbon black, fullerenes.

520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 523, subclass 160 for a composition containing a synthetic resin or natural rubber having utility as an ink for glass or for ceramic substrates; subclass 161 for a ballpoint pen or a typewriter ink composition, or for processes of preparing said compositions.

31.14 Invisible:

This subclass is indented under subclass 31.13. Coating or plastic compositions specifically designed to be an invisible ink, which may be activated by any known means to produce a visible ink (e.g., by the action of heat, light, or other subsequent treatment).

SEE OR SEARCH CLASS:

520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 523, subclass 161 for a composition containing a synthetic resin or natural rubber having utility as an invisible ink or to processes of preparing said composition.

31.15 Fluorescent:

This subclass is indented under subclass 31.14. Compositions which radiate unpolarized light when illuminated.

SEE OR SEARCH CLASS:

252, Compositions, subclasses 301.16 through 301.35 , 301.36, 301.4 to 301.6, and 625 for compositions containing a fluorescent or phosphorescent material, becoming visible when subjected to subsequent excitation (e.g., ultraviolet light.)

31.16 Chromogenic (i.e., color formation by reaction of color former with color developer):

This subclass is indented under subclass 31.14. Compositions which develop a color by contacting a color former compound (electron donor) with a color developer compound (electron acceptor) in a manner to cause reaction.

31.17 Specified developer (i.e., electron acceptor):

This subclass is indented under subclass 31.16. Compositions where the developer (electron acceptor) is identified.

31.18 Phenolic hydroxy compound as the developer:

This subclass is indented under subclass 31.17. Compositions wherein the specified developer is a phenolic hydroxy compound.

(1) Note. A phenolic hydroxy compound is a compound wherein a hydroxy group is bonded directly to a substituted or unsubstituted benzene ring.

31.19 With specified color former:

This subclass is indented under subclass 31.18. Compositions where the color former (electron donator, proton accepting component) is identified.

(1) Note. An example of a color former is malachite green lactone.

31.2 Specified color former (i.e., electron donating):

This subclass is indented under subclass 31.18. Compositions where the color former (electron donating or proton accepting) is identified.

31.21 The color former contains a heterocyclic oxygen ring:

This subclass is indented under subclass 31.2. Compositions wherein the color former contains a heterocyclic ring having a ring oxygen atom.

(1) Note. A heterocyclic oxygen ring herein is a ring that contains carbon, oxygen, and optionally nitrogen, sulfur, selenium or tellurium as the only ring members.

31.22 Fluoran or derivative containing:

This subclass is indented under subclass 31.21. Compositions wherein the color former contains a fluoran or derivative thereof.

31.23 Erasable composition:

This subclass is indented under subclass 31.14. Compositions which have the ability to be removed (erased).

SEE OR SEARCH THIS CLASS, SUBCLASS:

31.32, for inks containing organic dye and features (to include, i.e., erasable, purified, fugitive, indicative, conduc-

tive, fluorescent, chromogenic, or magnetic).

31.34, for inks (containing a pigment) which are erasable, purified, fugitive, indicative, conductive, fluorescent, chromogenic or magnetic.

31.24 Protein, carbohydrate, or wax containing

This subclass is indented under subclass 31.14. Compositions containing one of the substances protein, carbohydrate, or wax.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31.53, for inks containing organic dye and a protein or derivative.

31.82, for inks containing pigment and a protein or derivative.

31.94, for marking compositions containing carbohydrate, protein, or derivative.

31.25 Emulsion:

This subclass is indented under subclass 31.13. Compositions which are in the form of an emulsion.

SEE OR SEARCH CLASS:

252, Compositions, subclasses 306+ for emulsions, per se (i.e., not used as an ink).

31.26 Water in oil:

This subclass is indented under subclass 31.25. Compositions wherein the emulsion is water in oil.

31.27 Organic dye containing:

This subclass is indented under subclass 31.13. Compositions wherein a dye in the ink composition is an organic dye.

SEE OR SEARCH CLASS:

8, Bleaching and Dyeing: Fluid Treatment and Chemical Modification of Textiles and Fibers, for other compositions to be used for dyeing.

31.28 With pigment:

This subclass is indented under subclass 31.27. Compositions further containing a pigment.

SEE OR SEARCH THIS CLASS, SUBCLASS:

24.00, for inks containing a pigment.

24.33, for inks containing an inorganic pigment.

SEE OR SEARCH CLASS:

106, Compositions: Coating or Plastic, subclasses 400+ for pigment, filler, or aggregate compositions.

31.29 Hot melt type or wax containing:

This subclass is indented under subclass 31.27. Compositions having the characteristic of being hot melt type ink compositions or containing wax.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31.08, for indelible crayon compositions containing wax.

31.1, for erasable crayon compositions containing wax.

31.12, for pencil lead compositions containing wax.

31.61, for inks containing pigments that also are the hot melt type or wax-containing.

31.3 Petroleum derivative containing (e.g., paraffin or microcrystalline, wax, etc.):

This subclass is indented under subclass 31.29. Compositions containing a petroleum derivative (e.g., paraffin or microcrystalline wax, etc.).

31.31 Natural wax containing (e.g., carnauba, montan, Japan, candelilla, etc.):

This subclass is indented under subclass 31.29. Compositions containing a natural wax, (e.g., carnauba, montan, Japan, candelilla, etc.).

31.32 Erasable, purified, correctable, fugitive, indicator, conductive, fluorescent, chromogenic, or magnetic compound:

This subclass is indented under subclass 31.27. Compositions having the characteristic of being erasable purified, correctable, fugitive, indicative, conductive, fluorescent, chromogenic or magnetic in nature.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31.23, for invisible inks that are erasable compositions.

31.84, for inks, containing a pigment, which are erasable, purified, correctable,

fugitive, indicator, conductive, fluorescent, chromogenic, or magnetic.

31.33 Specified particle size or coated particle containing:
This subclass is indented under subclass 31.27. Compositions containing a particle of a specified size or which contain coated particles.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.65, for pigmented ink containing a particle of a specified size or containing coated particles.

31.34 Fat, fatty oil, fatty acid, or derivative thereof containing:
This subclass is indented under subclass 31.27. Compositions containing fat, fatty oil, fatty acid, or derivative thereof (e.g., castor oil).

(1) Note. Many of the patents in this subclass and indented subclasses are for printing inks.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.66, for inks containing pigments and fat, fatty oil, fatty acid, or derivative thereof.

31.35 Fatty acid or derivative containing:
This subclass is indented under subclass 31.34. Compositions containing a fatty acid or fatty acid derivative.

31.36 Carbohydrate or derivative containing:
This subclass is indented under subclass 31.27. Compositions containing carbohydrate or derivative thereof (e.g., dextrin, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.24, for invisible inks containing protein, carbohydrate, or wax.
31.68, for pigment containing inks with carbohydrate or derivative thereof.
31.94, for marking compositions containing carbohydrate, protein, or derivative thereof.

31.37 Cellulose or derivative containing:
This subclass is indented under subclass 31.36. Compositions containing cellulose or derivative.

31.38 Carbohydrate gum containing:
This subclass is indented under subclass 31.36. Compositions containing carbohydrate gum.

(1) Note. Examples of carbohydrate gum, are gum Arabic, xanthan gum, and guar gum.

31.39 Starch containing:
This subclass is indented under subclass 31.36. Compositions containing starch.

31.4 Natural resin or derivative containing:
This subclass is indented under subclass 31.27. Compositions containing natural resin or derivative thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.72, for pigmented inks which contain a natural resin or derivative thereof.
31.96, for marking compositions containing natural resin or derivative thereof.

31.41 Resin or derivative containing:
This subclass is indented under subclass 31.4. Compositions containing rosin or derivative thereof.

31.42 Shellac or derivative containing:
This subclass is indented under subclass 31.4. Compositions containing shellac or derivative thereof.

31.43 Organic nitrogen compound containing:
This subclass is indented under subclass 31.27. Compositions which contain an organic nitrogen compound.

(1) Note. An organic nitrogen compound is a compound wherein nitrogen is attached directly or indirectly to carbon of an organic compound by nonionic bonding

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.75, for pigmented ink containing an organic nitrogen compound, wherein

the organic nitrogen compound may or may not be the pigment.

31.97, for marking compositions containing an organic nitrogen or organic sulfur compound.

31.44 Anthraquinone attached directly or indirectly to the nitrogen by nonionic bonding:
This subclass is indented under subclass 31.43. Subject matter wherein the nitrogen is attached directly or indirectly to an anthraquinone ring system by nonionic bonding.

31.45 The nitrogen is part of a cyano group:
This subclass is indented under subclass 31.43. Subject matter wherein the nitrogen is in a cyano group.

31.46 The nitrogen is a ring member of a heterocyclic ring:
This subclass is indented under subclass 31.43. Subject matter wherein a heterocyclic ring contains at least one nitrogen atom as a ring member.

(1) Note. A heterocyclic ring is a ring that contains only carbon and at least one ring hetero atom selected from nitrogen, oxygen, sulfur, selenium, or tellurium.

31.47 Six-ring members in the heterocyclic ring:
This subclass is indented under subclass 31.46. Subject matter wherein the heterocyclic ring is six-membered.

31.48 Acyclic azo attached directly or indirectly to the heterocyclic ring by nonionic bonding:
This subclass is indented under subclass 31.47. Subject matter wherein an acyclic azo group, -N=N-, is bonded to two discrete carbons and is attached directly or indirectly to the six-membered, heterocyclic ring by nonionic bonding.

31.49 Five-ring members in the heterocyclic ring:
This subclass is indented under subclass 31.48. Subject matter wherein the heterocyclic ring is five-membered.

31.5 Acyclic azo attached directly or indirectly to the heterocyclic ring by nonionic bonding:
This subclass is indented under subclass 31.49. Subject matter wherein an acyclic azo group, -N=N-, is attached directly or indirectly to the five-membered, heterocyclic ring by nonionic bonding. The azo group is bonded directly to two discrete carbons.

31.51 The nitrogen is part of an acyclic azo group:
This subclass is indented under subclass 31.43. Compositions wherein the nitrogen is part of an acyclic azo group, -N=N-, which is bonded directly to two discrete carbons.

31.52 Plural acyclic azo group component containing:
This subclass is indented under subclass 31.51. Compositions wherein a plural acyclic azo group containing compound is present.

31.53 Protein or derivative containing:
This subclass is indented under subclass 31.43. Compositions containing a protein or derivative (e.g., alginic acid-plant protein, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

31.24, for invisible inks containing protein, carbohydrate, or wax.

31.82, for pigmented inks containing protein or derivative thereof

31.94, for marking compositions containing carbohydrate, protein, or derivatives thereof.

31.54 Gelatin, glue, or derivative containing:
This subclass is indented under subclass 23.28. Compositions containing gelatin, glue, or derivative thereof.

31.55 Casein or derivative containing:
This subclass is indented under subclass 31.53. Compositions containing casein or derivative thereof.

31.56 Seed or derivative thereof containing (e.g., nuts, beans, zein, grain, rice, corn, wheat, oats, gluten, soybean, etc.):
This subclass is indented under subclass 31.53. Compositions containing natural seed or derivative thereof.

31.57 Specified vehicle, solvent, or dispersing medium containing:
This subclass is indented under subclass 23.00. Compositions containing an identified vehicle, solvent, or dispersing medium.

(1) Note. For purposes of this subclass and its indent, a substance is "identified" if it is defined either (a) in terms of a chemical structure characteristic, or (b) quantitatively in terms of a specific physical property.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31.59, for inks containing an organic dye and specified surfactant.

31.85, for inks containing a pigment and specified vehicle, solvent, or dispersing medium.

31.89, for inks containing a pigment and a specified surfactant.

31.58 Organic oxygen compound containing:
This subclass is indented under subclass 31.57. Compositions containing an organic oxygen compound.

(1) Note. An organic oxygen compound is one wherein oxygen is attached directly or indirectly to carbon of an organic compound by nonionic bonding.

31.59 Specified surfactant containing:
This subclass is indented under subclass 31.27. Compositions containing an identified surfactant.

(1) Note. The surfactants may be of any type (e.g., anionic, nonionic etc.).

(2) Note. For purposes of this subclass, a substance is "identified" if it is defined either (a) in terms of a chemical structure characteristic or (b) quantitatively in terms of a specific physical property.

31.6 Pigment containing:
This subclass is indented under subclass 31.13. Compositions containing a pigment.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31.27, for inks containing an organic dye and a pigment.

31.9, for inks containing an inorganic pigment.

SEE OR SEARCH CLASS:

106, Compositions: Coating or Plastic, subclasses 400+ for pigment, filler, or aggregate composition.

31.61 Hot, melt type, or wax containing:
This subclass is indented under subclass 31.6. Composition having the characteristic of being hot melt type or wax containing.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31.08, for indelible crayon compositions containing wax.

31.1, for erasable crayon compositions containing wax.

31.12, for pencil lead compositions containing wax.

31.29, for inks containing organic dye, that are hot, melt type, or wax containing.

31.62 Petroleum derivative containing (e.g., paraffin, or microcrystalline wax, etc.):
This subclass is indented under subclass 31.61. Compositions containing a petroleum derivative (e.g., paraffin or microcrystalline wax.)

31.63 Natural wax containing (e.g., carnauba, montan, Japan, candellilla, etc.)
This subclass is indented under subclass 31.61. Compositions containing a natural wax.

31.64 Erasable, purified, correctable, fugitive, indicator, conductive, fluorescent, chromogenic, or magnetic composition:
This subclass is indented under subclass 31.6. Compositions having the characteristic of being erasable, purified correctable, fugitive, indicator, conductive, fluorescent, chromogenic, or magnetic in nature.

SEE OR SEARCH THIS CLASS, SUBCLASS:

31.23, for invisible inks which have the ability to be removed or erased.

31.32, for inks containing organic dye which are erasable, purified, correctable, fugitive, indicator, conductive, fluorescent, chromogenic, or magnetic.

31.65 Specified particle size or coated particle containing:
This subclass is indented under subclass 31.6. Compositions containing a particle of a specified size or coated particles.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.33, for inks containing organic dye where a component is identified by particle size or is coated.

31.66 Fat, fatty oil, fatty acid, or derivative thereof containing:
This subclass is indented under subclass 31.6. Compositions containing fat, fatty oil, fatty acid, or derivative thereof, (e.g., castor oil).

(1) Note. Many of the patents in this subclass and indented subclasses are for printing inks.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.84, for organic dye containing inks with a component of fat, fatty oil, fatty acid, or derivative thereof (e.g., castor oil).

31.67 Fatty acid or derivative containing:
This subclass is indented under subclass 31.66. Compositions containing a fatty acid or fatty acid derivative.

31.68 Carbohydrate or derivative containing:
This subclass is indented under subclass 24.00. Compositions containing carbohydrate or derivative thereof (e.g., dextrin, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.24, for invisible inks containing protein, carbohydrate, or wax.
31.36, for ink containing carbohydrate or derivative (e.g., dextrin, etc.).
31.94, for marking compositions containing carbohydrate, protein, or derivatives thereof.

31.69 Cellulose or derivative containing:
This subclass is indented under subclass 31.68. Compositions containing cellulose or derivative thereof.

31.7 Carbohydrate gum containing:
This subclass is indented under subclass 31.68. Compositions containing carbohydrate gum, (e.g., gum Arabic (acacia), xanthan gum, guar, etc.).

31.71 Starch containing:
This subclass is indented under subclass 31.68. Compositions containing starch.

31.72 Natural resin or derivative containing:
This subclass is indented under subclass 31.6. Compositions containing a natural resin or derivative.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.4, for inks containing organic dye and natural resin or derivative thereof.
31.96, for marking compositions containing natural resin or derivative thereof.

31.73 Resin or derivative containing:
This subclass is indented under subclass 31.72. Compositions containing rosin or derivative.

31.74 Shellac or derivative containing:
This subclass is indented under subclass 31.72. Compositions containing shellac or derivative.

31.75 Organic nitrogen compound containing:
This subclass is indented under subclass 24.00. Compositions which contains an organic nitrogen compound.

(1) Note. An organic nitrogen compound is a compound wherein nitrogen is attached directly or indirectly to carbon of an organic compound by nonionic bonding.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.43, for ink containing organic dye wherein an organic nitrogen compound, which may be the dye, is present.
31.47, for marking compositions containing an organic nitrogen or an organic sulfur compound.

31.76 The nitrogen is a ring member of a heterocyclic ring:
This subclass is indented under subclass 31.75. Subject matter wherein a heterocyclic ring contains at least one nitrogen atom as a ring member.

(1) Note. A heterocyclic ring is a ring that contains only carbon and at least one ring hetero atom selected from nitrogen, oxygen, sulfur, selenium, or tellurium.

31.77 Six-ring members in the heterocyclic ring:
This subclass is indented under subclass 31.76. Subject matter wherein the heterocyclic ring is six-membered and has at least one ring nitrogen.

31.78 Five-ring members in the heterocyclic ring:
This subclass is indented under subclass 31.76. Subject matter wherein the heterocyclic ring is five-membered and has at least one ring nitrogen.

31.79 Acyclic azo attached directly or indirectly to the heterocyclic ring by nonionic bonding:
This subclass is indented under subclass 31.78. Subject matter wherein an acyclic azo group, -N=N-, is bonded directly to two discrete carbons and is attached directly or indirectly to the heterocyclic ring by nonionic bonding

31.8 The nitrogen is part of an acyclic azo group:
This subclass is indented under subclass 31.75. Compositions wherein an acyclic azo group compound is present.

(1) Note. An acyclic azo group compound is one wherein acyclic -N=N- is bonded to two discrete carbons.

31.81 Plural acyclic azo group component containing:
This subclass is indented under subclass 31.80. Compositions wherein a plural acyclic azo group containing compound is present.

31.82 Protein or derivative containing:
This subclass is indented under subclass 31.75. Compositions containing a protein or derivative (e.g., alginic acid-plant protein).

31.83 Gelatin, glue, or derivative containing:
This subclass is indented under subclass 31.82. Compositions containing gelatin, glue, or derivative.

31.84 Casein or derivative containing:
This subclass is indented under subclass 31.82. Compositions containing casein or derivative.

31.85 Specified vehicle, solvent, or dispersing medium containing:
This subclass is indented under subclass 31.6. Compositions containing an identified vehicle, solvent, or dispersing medium.

(1) Note. For purposes of this subclass and its indents, a substance is “identified” if it is defined either (a) in terms of a chemical structure characteristic or (b) quantitatively in terms of a special physical property.

SEE OR SEARCH THIS CLASS, SUBCLASS:
31.57, for inks containing an organic dye and a specified vehicle, solvent, or dispersing medium.
31.59, for inks containing an organic dye and a specified surfactant.
31.89, for inks containing a pigment and an identified surfactant.

31.86 Organic oxygen compound containing:
This subclass is indented under subclass 31.85. Compositions containing an organic oxygen compound.

(1) Note. An organic oxygen compound is one wherein oxygen is attached directly or indirectly to carbon of an organic compound by nonionic bonding.

31.87 Organic sulfur compound containing:
This subclass is indented under subclass 31.85. Compositions containing an organic sulfur compound.

(1) Note. An organic sulfur compound is one wherein sulfur is attached directly or indirectly to carbon of an organic compound by nonionic bonding.

31.88 Hydrocarbon compound containing:
This subclass is indented under subclass 31.85. Compositions containing a hydrocarbon.

(1) Note. A hydrocarbon compound consists of only carbon and hydrogen atoms.

31.89 Specified surfactant containing:
This subclass is indented under subclass 31.6. Compositions containing an identified surfactant

(1) Note. The surfactants may be of any type (e.g., anionic, nonionic, etc.).

(2) Note. For purposes of this subclass and its indents, a substance is "identified" if it is defined either (a) in terms of a chemical structure characteristic or (b) quantitatively in terms of a special physical property.

31.9 The pigment is inorganic:
This subclass is indented under subclass 31.6. Compositions containing an inorganic pigment.

31.91 Bituminous material or tarry residue containing:
This subclass is indented under subclass 31.01. Compositions containing bituminous material or tarry residue.

31.92 Electrically conductive or magnetic compositions (e.g., electrically sensitive, electrochemical, electrolytic, etc.):
This subclass is indented under subclass 31.01. Compositions which exhibit electrically conductive or magnetic properties.

31.93 Felt tip or correction composition:
This subclass is indented under subclass 31.01. Coating or plastic compositions useful as felt tip devices or as correction compositions.

31.94 Carbohydrate, protein, or derivative containing:
This subclass is indented under subclass 31.01. Compositions containing carbohydrate, protein, or derivative thereof.

31.95 Glass, glass derivative, carbon, or free metal containing:
This subclass is indented under subclass 31.01. Compositions containing glass, glass derivative, carbon, or free metal.

(1) Note. Buckminster fullerenes, graphite, and diamond are encompassed by carbon.

31.96 Natural resin or derivative thereof containing:
This subclass is indented under subclass 31.01. Compositions containing a natural resin or derivative thereof.

31.97 Organic nitrogen compound or organic sulfur compound containing:
This subclass is indented under subclass 31.01. Compositions wherein an organic nitrogen compound or organic sulfur compound is present.

(1) Note. An organic nitrogen compound is one wherein nitrogen is attached directly or indirectly to carbon of an organic compound by nonionic bonding. An organic sulfur compound is similarly defined.

32.5 Coating or plastic compositions specialized for use in producing surfaces which are intended to receive marks, and from which the marks may be readily removed, e.g., blackboards, slates and analogous surfaces.

SEE OR SEARCH CLASS:
428, Stock Material or Miscellaneous Articles, subclass 687 for metallic stock material having a special surface feature, e.g., glossy.
434, Education and Demonstration, subclass 425 for devices having erasable surfaces wherein the structure is claimed in combination with special materials used in its construction, and including devices which are merely coated bases.

33 Coating or plastic compositions specialized for use in plugging or stopping leaks or punctures.

(1) Note. Most of the patents in this subclass are drawn to compositions for stopping leaks in automobile radiators and in pneumatic tires.

SEE OR SEARCH CLASS:

152, Resilient Tires and Wheels, subclasses 502+ for pneumatic tire leak-stopping compositions for the self-healing of tire punctures.

252, Compositions, subclass 72 for heat exchange, low-freezing or pour point or high boiling compositions containing Leak-stopping agents.

428, Stock Material or Miscellaneous Articles, subclass 912 (a cross-reference art collection) for a product embodying a puncture healing layer.

520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 523, subclass 166 for a composition containing a synthetic resin or natural rubber as a puncture sealant for a pneumatic tire or for a composition used in the emergency repair of vehicular tires or to processes of preparing said composition.

34 Coating or plastic compositions which are specially designed for use as stains.

SEE OR SEARCH CLASS:

8, Bleaching and Dyeing; Fluid Treatment and Chemical Modification of Textiles and Fibers, appropriate subclasses, particularly subclass 402 for stains wherein the staining action is accomplished by use of compositions including dyestuffs, which do not form a permanent film on the base.

35 Coating or plastic compositions specialized for dental use, e.g., for dentures, artificial teeth, etc., and dental fillings and cements.

SEE OR SEARCH CLASS:

420, Alloys or Metallic Compositions, for alloys which contains less than 50 percent iron and which may be useful for making dental parts and cements, particularly subclasses 526+ for amalgams.

433, Dentistry, subclasses 167+ for dentures and artificial teeth, per se, where there is no claim to the composition, per se.

523, Synthetic Resins or Natural Rubbers, subclasses 116+ for a composition containing a synthetic resin or natural rubber used as a cement or filling for a tooth or to processes of preparing said composition.

36 Coating or plastic compositions specially designed for the production of a tractive or friction surface, e.g., in forming pulley, clutch or brake facing.

SEE OR SEARCH CLASS:

75, Specialized Metallurgical Processes, Compositions for Use Therein, Consolidated Metal Powder Compositions, and Loose Metal Particulate Mixtures, subclass 231 for a composition having a continuous phase of free metal made by consolidating metal particles and having an abrasive constituent.

152, Resilient Tires and Wheels, appropriate subclasses, particularly subclass 211 for anti-skid tires.

188, Brakes, subclasses 250+ for brake elements having significant brake structure which brake elements may include as an element a lining or facing of a traction or friction composition.

192, Clutches and Power-Stop Control, subclass 107 for clutches having significant clutch structure which clutches may include as an element a lining or facing of a traction or friction composition.

474, Endless Belt Power Transmission Systems or Components, particularly subclasses 177+ and 190+ for a friction drive pulley having a nonmetallic component forming the drive face, for pulleys including a composition on the rim to increase the traction on the belt.

37 Coating or plastic composition which are specially designed for use in recording sound.

(1) Note. The broad reference to shape or to the presence of grooves is not considered enough structure to take a claim to a sound record, which is otherwise defined solely by composition of matter, away from this class.

SEE OR SEARCH CLASS:
369, Dynamic Information Storage or Retrieval, subclasses 272+ for sound records which include significant structure, other than shape or presence of grooves.

38 Coating or plastic compositions specially designed for fillings in the bottom of shoes or soles thereof.

(1) Note. See Class 520, Synthetic Resins or Natural Rubbers, appropriate subclasses particularly Class 523, subclass 167 for a composition containing a synthetic resin or natural rubber having utility in the manufacturing or repairing of shoes or to processes of preparing said composition.

SEE OR SEARCH CLASS:
36, Boots, Shoes, and Leggings, appropriate subclasses, particularly subclass 25 and 34 for shoes and elements, thereof, e.g., soles or heels, defined only by composition.

38.2 Compositions which are (a) specialized for use in making molds, (b) specialized for use in coating molds, or (c) molds claimed solely in terms of the composition of which they are composed.

(1) Note. The molds and mold compositions included in this subclass are intended for use in plastic shaping processes such as casting, injecting, film spreading, etc., regardless of the material shaped. For the purpose of classification in this and indented subclasses, such shaping members as patterns, matrices, cores and film casting surfaces are all considered to be molds.

(2) Note. For molds and analogous devices claimed in terms of significant mold structure, whether or not the composition of which the mold is composed is also claimed, the Search Class notes below referencing this (2) Note should be consulted

(3) Note. Molds mentioned by name only and defined by a single material other than a composition of which the mold is made, are classified on the basis of such material. In this connection, the Search Class notes referencing this (3) Note should be consulted.

(4) Note. Search this class, appropriate subclasses, for similar compositions which are not specialized for use in making or coating molds.

SEE OR SEARCH CLASS:
148, Metal Treatment, subclasses 400+ for molds which are stock resulting from processes of treating metals classifiable in Class 148, or are stock distinguished only by the internal structure or characteristics of the metals, metallic compositions or alloys comprising such products. (see (3) Note above)
164, Metal Founding, appropriate subclasses, particularly subclasses 520+ for processes of making molds from particular material subclass 138 for processes of casting metal in a mold of a particular composition and subclasses 349+ for sand molds or cores. (see (2) Note above)
249, Static Molds, subclasses 134+ for molds having a particular structure composed of a specific composition; see (2) Note above. (see (2) Note above)
260, Chemistry of Carbon Compounds see (3) Note above.
264, Plastic and Nonmetallic Article Shaping or Treating: Processes, subclasses 219+ for processes within the class definition including the step of making the mold (including mold making, per se) and subclasses 337+ pertaining to the use of particular mold materials. (see (2) Note above)
420, Alloys or Metallic Compositions, appropriate subclasses for molds claimed solely in terms of the metal or

alloy of which they are composed. (see (3) Note above)

423, Chemistry of Inorganic Compounds, see (3) Note above).

425, Plastic Article or Earthenware Shaping or Treating: Apparatus, appropriate subclasses for a molding machine for manufacturing nonmetal products, especially see subclasses 175+ for such apparatus for forming a mold. (see (2) Note above)

427, Coating Processes, subclasses 133+ for processes of coating, per se, wherein the substrate is disclosed as a mold.

428, Stock Material or Miscellaneous Articles, appropriate subclasses for a coated mold, where no significant mold structure is claimed, especially subclasses 411+ for a composite, nonstructural product distinguished only by the compositions of the layers and subclasses 544+ for molds claimed in terms of metallic stock.

508, Solid Anti-Friction Devices, Materials Therefor, Lubricant or Separant Compositions for Moving Solid Surfaces, and Miscellaneous Mineral Oil Compositions, appropriate subclasses for compositions whose purpose is to impart lubricity to moving surfaces. A search in Class 508 may be appropriate to ensure a complete search.

520, Synthetic Resins, for a composition for making or coating a mold, particularly Class 523, subclasses 139+ for compositions relating to metal foundry molding or metallurgical furnaces. (see (2) Note above)

38.22 This subclass is indented under subclass 38.2. Compositions which are specialized for use in coating or lining molds.

SEE OR SEARCH CLASS:

249, Static Molds, subclasses 114+ for molds having a particular structure provided with a coating or lining.

38.23 This subclass is indented under subclass 38.22. Compositions in the preparation of which a carbohydrate or derivative thereof is employed.

38.24 This subclass is indented under subclass 38.22. Compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

38.25 This subclass is indented under subclass 38.22. Compositions in the preparation of which a wax, bituminous or resinous material or tarry residue is employed.

38.27 This subclass is indented under subclass 38.22. Compositions which contain only inorganic materials or materials in elemental form.

SEE OR SEARCH CLASS:

420, Alloys or Metallic Compositions, appropriate subclasses for mold coatings claimed solely in terms of the metal or alloy of which they are composed.

38.28 This subclass is indented under subclass 38.27. Compositions in the preparation of which elemental carbon, e.g., graphite, is employed.

38.3 This subclass is indented under subclass 38.2. Compositions in the preparation of which an alkali metal silicate or an inorganic settable ingredient is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

600+, and 638+, for similar compositions which are not specialized for use in making molds.

38.35 This subclass is indented under subclass 38.3. Compositions in the preparation of which an organic material is employed.

38.4 This subclass is indented under subclass 38.2. Compositions in the preparation of which a protein or derivative thereof is employed.

38.51 This subclass is indented under subclass 38.2. Carbohydrate or Derivative Containing: Compositions in the preparation of which a carbohydrate or derivative thereof is employed.

SEE OR SEARCH CLASS:

75, Specialized Metallurgical Processes, Compositions for Use Therein, Consolidated Metal Powder Composi-

tions, and Loose Metal Particulate Mixtures, subclass .5 and subclasses 122.1+ for molds claimed solely in terms of the metal or alloy composition of which they are composed.

38.6 This subclass is indented under subclass 38.2. Compositions in the preparation of which a natural resin or derivative thereof is employed.

38.7 This subclass is indented under subclass 38.2. Compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

38.8 This subclass is indented under subclass 38.2. Compositions in the preparation of which a wax, bituminous material or tarry residue is employed.

38.9 This subclass is indented under subclass 38.2. Compositions which contain only inorganic materials or materials in elemental form.

SEE OR SEARCH CLASS:

420, Alloys or Metallic Compositions, appropriate subclasses for molds claimed solely in terms of the metal or alloy of which they are composed.

122 Coating or plastic compositions which are rendered porous by some specific step performed for this purpose.

(1) Note. This subclass does not include porous compositions in which the porosity is due solely to the use of naturally occurring porous ingredients, which compositions are classified on some other basis.

SEE OR SEARCH THIS CLASS, SUBCLASS:

40, 41, 601+, and 672+, for other pore forming within this class.

SEE OR SEARCH CLASS:

51, Abrasive Tool Making Process, Material, or Composition, subclass 296 for an abrasive tool making process including a pore forming step, or for a porous abrading composition.

216, Etching a Substrate: Processes, subclass 56 for the use of etching in the formation of a porous or perforated article.

264, Plastic and Nonmetallic Article Shaping or Treating: Processes, subclasses 41+ for processes of molding which include the step of pore forming in situ.

366, Agitating, subclasses 3+ for mortar mixing processes including the step of incorporating air or gas.

419, Powder Metallurgy Processes, subclass 2 for processes of making porous products from particulate material which include metal particles with heat.

428, Stock Material or Miscellaneous Articles, subclasses 304.4+ for a stock material product of at least two components, in which one of the components is either porous or cellular and subclass 613 for porous metallic stock.

521, Synthetic Resins or Natural Rubbers, appropriate subclass for a cellular or pore containing synthetic resin or natural rubber.

123.11 CELLULOSE LIBERATION WASTE LIQUOR, SOLID, OR REACTION PRODUCT THEREOF CONTAINING (E.G., BLACK LIQUOR, SULFITE YEAST LIQUOR, NEUTRALIZED SULFITE LIQUOR, ETC.):

This subclass is indented under the class definition. Compositions which contain a waste product from sulfur paper making process or the chemical modification of such waste product.

(1) Note. This subclass and indented subclasses provide for all treatments of waste cellulose liberation residues or liquor for which there is no provision elsewhere.

(2) Note. The expression “organic compound” in this and indented subclasses corresponds to the class 260 class definition, i.e., compounds containing carbon, which are further characterized by the presence in a molecule thereof of (a) two carbon atoms bonded together, (b) one

atom of carbon bonded to at least one atom of hydrogen or halogen, or (c) one atom of carbon bonded to at least one atom of nitrogen by a single or double bond, with the proviso that HCN, CN-CN, HNCO, HNCS, cyanamide, cyanogen halides, fulminic acid, metal carbides, and graphite are excluded from being organic compounds.

SEE OR SEARCH CLASS:

110, Furnaces, subclass 346 for processes of burning waste cellulose liberation liquor or residues not accompanied by the recovery of any specific material.

162, Paper Making and Fiber Liberation, particularly subclasses 29+ for processes of fiber liberation including recovery or recycle of the waste digestion liquor or residue thereof.

423, Chemistry of Inorganic Compounds, appropriate subclasses, especially subclasses 1+ for treating mixtures to obtain metal containing compounds.

435, Chemistry: Molecular Biology and Microbiology, subclass 251 and 252 for processes of fermenting cellulose liberation waste liquor not combined with a fiber liberation.

520, Synthetic Resins or Natural Rubbers, Class 524, subclasses 72+ and 735 for lignin nonreactant materials in admixture with a synthetic resin; and Class 527, subclasses 400+ for a lignin containing synthetic resin.

530, Chemistry: Natural Resins or Derivatives; Peptides or Proteins; Lignins or Reaction Products Thereof, subclasses 205+ and 500+, for the recovery of organic compound from waste fiber treating agents, not combined with fiber treating steps.

123.12 With proteinaceous material or carbohydrate from an external source:

This subclass is indented under subclass 123.11. Compositions which contain a proteinaceous material or a carbohydrate from a source external to the cellulose liberation waste liquor, solid, or reaction product thereof in addition to the cellulose liberation waste liquor, solid, or reaction product thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:

124.1, for the definition of a proteinaceous material.

124.1, (5) Note for the definition of a carbohydrate.

123.13 With bituminous or tarry residue, naturally occurring wax, or organic compound containing oxygen:

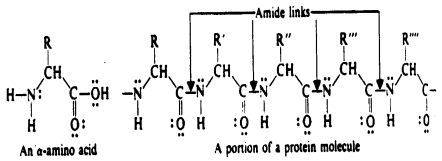
This subclass is indented under subclass 123.11. Compositions which contain (a) a composition or compound having the characteristics of a tar or pitch no matter what the origin, (b) a naturally occurring low-melting organic mixture or compound of hydrocarbons or esters of fatty acids and alcohols having the characteristics of wax (solid at room temperature), or (c) an organic compound which has at least one oxygen atom therein in addition to the cellulose liberation waste liquor, solid, or chemical modification thereof.

(1) Note. See this class, subclass 123.11, (2) Note for the definition of an organic compound.

124.1 Proteinaceous material containing:

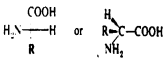
This subclass is indented under the class definition. Compositions which contain a polypeptide (polyamide) of more than 100 ,a-amino acid residues or of molecular weight of greater than 10,000, a naturally occurring material which has such polypeptide as one of its ingredients, or a chemical modification of such polypeptide.

(1) Note. A peptide (amide) bond is an amino bond between the carboxyl group of one amino acid and the amino group of another.



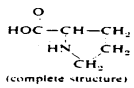
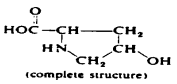
Where R, R', R", R"', or R"" are defined by R below along with the names of the amino acids found in proteins.

L-Amino Acids Found in Proteins



STRUCTURE OF R	NAME	ABBREVIATION	pK_{a_1} α-CO_2H	pK_{a_2} α-NH_3^+	pK_{a_3} R Group	p*I*
R group is neutral						
–H	Glycine	Gly	2.3	9.6		6.0
$-CH_3$	Alanine	Ala	2.3	9.7		6.0
$-CH(CH_3)_2$	Valine*	Val	2.3	9.6		6.0
$-CH_2CH(CH_3)_2$	Leucine*	Leu	2.4	9.6		6.0
$-CHCH_2CH_3$ (CH₃)	Isoleucine*	Ile	2.4	9.7		6.1
$-CH_2-C_6H_5$	Phenylalanine*	Phe	1.8	9.1		5.5

AMINO ACIDS AND PROTEINS

STRUCTURE OF R	NAME	ABBREVIATION
$-CH_2CONH_2$	Asparagine	Asn
$-CH_2CH_2CONH_2$	Glutamine	Gln
$-CH_2-C_8H_6N$	Tryptophan*	Trp
 (complete structure)	Proline	Pro
R contains an —OH group		
$-CH_2OH$	Serine	Ser
$-CHOH-CH_3$	Threonine*	Thr
$-CH_2-C_6H_4-OH$	Tyrosine	Tyr
 (complete structure)	Hydroxyproline	Hyp
R contains sulfur		
$-CH_2SH$	Cysteine	Cys
$-CH_2-S-CH_2-$	Cystine	Cys-Cys
$-CH_2CH_2SCH_3$	Methionine*	Met
R contains a carboxyl group		
$-CH_2COOH$	Aspartic acid	Asp
$-CH_2CH_2COOH$	Glutamic acid	Glu
R contains a basic amino group		
$-CH_2CH_2CH_2CH_2NH_2$	Lysine*	Lys
$-CH_2CH_2CH_2NH-C(=NH)-NH_2$	Arginine	Arg
$-CH_2-C_3H_3N_2$	Histidine	His

* = essential amino acids

(2) Note. Examples of proteins included herein are chemically modified protein wherein the polypeptide chemical structure is preserved, chemically modified protein wherein part of the polypeptide chemical structure has been removed, chemically modified protein wherein part of the polypeptide chemical structure has been replaced, chemically modified protein wherein the polypeptide chemical structure is indeterminate, and plant- or animal-derived material which has protein as one of its ingredients.

(3) Note. The term "chemical modification" herein is intended to include the conjugation of a protein with a nonpeptide compound, the addition of simple chemical elements or compounds to the protein, the sundering of parts of a large protein molecule, and the treatment to deliberately change the secondary, tertiary or quaternary structure of a polypeptide.

(4) Note. The expression "organic compound" in this and indented subclasses corresponds to the class 260 class definition, i.e., compounds containing carbon, which are further characterized by the presence in a molecule thereof of (a) two carbon atoms bonded together, (b) one atom of carbon bonded to at least one atom of hydrogen or halogen, or (c) one atom of carbon bonded to at least one atom of nitrogen by a single or double bond, with the proviso that HCN, CN-CN, HNCO, HNCS, cyanamide, cyanogen halides, fulminic acid, metal carbides, and graphite are excluded from being organic compounds.

(5) Note. The term "carbohydrate or derivative" in this and indented subclasses corresponds to Class 536 subclass 1.1 definition; i.e., saccharide whose monomeric units are polyhydroxy mono-aldehydes or polyhydroxy mono-ketones, having the formula $C_n(H_2O)_n$ (wherein n is five or six), or the corresponding cyclic hemiacetals thereof; or the reaction derivatives thereof in which the product is of indeterminate structure or

the carbon skeleton and the carbonyl function or hemiacetal function of the saccharide unit are not destroyed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

158.1, for compositions containing albumin or derivative thereof.

159.1, for compositions containing casein or derivative thereof.

160.1, for compositions containing gelatin or collagen or derivative thereof.

161.1, for compositions containing prolamine or derivative thereof.

SEE OR SEARCH CLASS:

426, Food or Edible Material: Processes, Compositions, and Products, appropriate subclasses especially 23, 32, 41, 54, 55+, 92, 105, and 129 for edible material which are or contain protein and processes for preparing the same.

428, Stock Material or Miscellaneous Articles, subclasses 474.4+ for a nonstructural stock material product in the form of a composite web or sheet including a layer comprising protein, and other appropriately titled subclasses (e.g., subclasses 435 and 458).

451, Abrading, for abrasive tool compositions having a protein component.

514, Drug, Bio-Affecting and Body Treating Compositions, subclasses 2+ for a composition containing peptide or protein.

520, Synthetic Resins or Natural Rubbers, Class 523, subclass 449 and 508, and Class 524, subclasses 9+, 17+, and 704 for a protein nonreactant material in admixture with a synthetic resin or natural rubber; and Classes 525, 526, 527, and 528 for a protein containing synthetic resin. See in particular, Class 520, subclass 1 (Note 9, C) for an explanation of the type of polymer derived from a protein reactant which is proper for Class 520.

530, Chemistry: Natural Resins or Derivatives; Peptides or Proteins, Lignins or Reaction Products Thereof, subclasses 350+ for proteins or derivatives thereof.

930, Peptide or Protein Sequence, subclasses 10+ for peptide or protein sequence of four or more amino acids.

124.2 Milk:

This subclass is indented under subclass 124.1. Compositions wherein the proteinaceous material is milk.

(1) Note. A portion of a milk sample will be assumed to be proper for this subclass unless it is clearly indicated that the sample contains no amino acid or polypeptide.

124.3 Chemically modified tissue derived from multicellular animal of indeterminate structure (e.g., hydrolyzed, etc.):

This subclass is indented under subclass 124.1. Compositions wherein the proteinaceous material is found in a hydrolysis product or other chemical modification of tissue derived from multicellular animal of indeterminate structure.

(1) Note. The term “multicellular animal” refers to living sentient multicelled organisms and is intended to include insects, fish, fowl, mammals, and other members of the animal kingdom.

124.4 Tissue derived from multicellular animal (e.g., connective tissue, muscle, organ, tendon, etc.):

This subclass is indented under subclass 124.1. Compositions wherein the proteinaceous material is a tissue of multicellular animal origin.

(1) Note. The term “multicellular animal” refers to living sentient multicelled organisms and is intended to include insects, fish, fowl, mammals, and other members of the animal kingdom.

124.5 Blood or blood plasma:

This subclass is indented under subclass 124.4. Compositions wherein the tissue derived from multicellular animal is blood or blood plasma.

(1) Note. A portion of a blood or blood plasma sample will be assumed to be proper for this subclass unless it is clearly indicated that the sample contains no amino acid or polypeptide.

SEE OR SEARCH CLASS:

424, Drug, Bio-Affecting and Body Treating Compositions, subclasses 85.1+ for composition of that class containing a blood protein.

514, Drug, Bio-Affecting and Body Treating Compositions, subclasses 2+ for compositions of that class containing a blood protein.

124.51 With carbohydrate from an external source:
This subclass is indented under subclass 124.5. Compositions which contain, in addition to the blood or blood plasma, a carbohydrate material from a source external to the blood or blood plasma.

SEE OR SEARCH THIS CLASS, SUBCLASS:

124.1, (5) Note for the definition of a carbohydrate.

124.6 Hide:
This subclass is indented under subclass 124.4. Compositions wherein the tissue derived from multicellular animal is animal skin.

SEE OR SEARCH CLASS:

520, Synthetic Resins or Natural Rubbers, particularly Class 523 and Class 524 for synthetic resin or natural rubber compositions containing leather.

124.61 With carbohydrate from an external source:
This subclass is indented under subclass 124.6. Compositions which contain, in addition to the hide, a carbohydrate material from a source external to the hide.

124.62 With natural resin or derivative, lanolin, lecithin, fat, or fatty oil:
This subclass is indented under subclass 124.6. Compositions which contain, in addition to the hide, a natural resin or chemical modification of a natural resin, lanolin, lecithin, fat, or fatty oil.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, japan, japan varnish, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, and sulfurized resins, or salts thereof.

GLOSSARY

FAT AND FATTY OIL

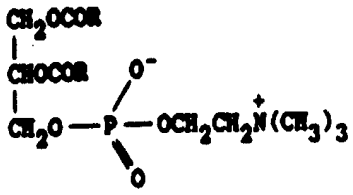
The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

LANOLIN

Cholesterol esters of higher fatty acids

LECITHIN

A mixture of the diglycerides of stearic, palmitic, and oleic acids, linked to the choline ester of phosphoric acid. Lecithin has the following structure, as shown below, wherein the R's are the same or different, and are acyclic hydrocarbon radicals of at least seven carbon atoms chain length.



124.7 Feather, scale, horn, hoof, claw, ivory, or bone:
This subclass is indented under subclass 124.4. Compositions wherein the tissue derived from multicellular animal is feather, scale, horn, hoof, claw, ivory, or bone.

SEE OR SEARCH CLASS:

34, Drying and Gas or Vapor Contact With Solids, subclasses 280+ and note thereto, for feather treatment.

520, Synthetic Resins or Natural Rubbers, particularly Classes 523 and 524 for synthetic resin or natural rubber compositions containing feathers.

124.8 Hair or fur:
This subclass is indented under subclass 124.4. Compositions wherein the tissue derived from multicellular animal is hair or fur.

SEE OR SEARCH CLASS:
520, Synthetic Resins or Natural Rubbers, particularly Classes 523 and 524 for synthetic resin or natural rubber compositions containing hair.

124.81 With carbohydrate from an external source:
This subclass is indented under subclass 124.8. Compositions which contain, in addition to the hair or fur, a carbohydrate material from a source external to the hair or fur.

(1) Note. See this class, subclass 124.1, (5) Note for the definition of a carbohydrate.

124.82 With natural resin or derivative, lanolin, lecithin, fat, or fatty oil:
This subclass is indented under subclass 124.8. Compositions which contain, in addition to the hair or fur, a natural resin or chemical modification of a natural resin, lanolin, lecithin, fat, or fatty oil.

124.83 With bituminous or tarry residue, hydrocarbon, or naturally occurring wax:
This subclass is indented under subclass 124.8. Compositions which contain, in addition to the hair or fur, (a) a composition or compound having the characteristics of a tar or pitch no matter what the origin, (b) an organic compound consisting exclusively of the elements carbon and hydrogen, or (c) a naturally occurring low-melting organic mixture or compound of hydrocarbons or esters of fatty acids and alcohols having the characteristics of wax (solid at room temperature).

(1) Note. Examples of components included herein are alkanes, alkenes, olefins, montan wax, ceresin wax, carnauba wax, all asphalts, bitumens, pitches and tars from coal, mineral oil, cotton seed pitch and the residue from the destructive distillation of wood, and natural oil distillations.

125.1 Seed or tuber material (e.g., whole grains, rice flour, wheat flour, cornmeal, etc.):
This subclass is indented under subclass 124.1. Compositions wherein the proteinaceous material is seed or tuber material (e.g., potatoes, arrowroot, etc.).

(1) Note. A naturally occurring mixture of carbohydrate and protein can be found in seed or tuber material.

(2) Note. This and indented subclasses will take compositions containing seed or tuber material that has been physically processed (e.g., cooked, mashed, comminuted, etc.).

SEE OR SEARCH CLASS:
241, Solid Material Comminution or Disintegration, subclasses 6+ for processes involving comminution of grain and the like.

126.1 With carbohydrate from an external source:
This subclass is indented under subclass 125.1. Compositions which contain, in addition to the seed or tuber material, a carbohydrate material from a source external to the seed or tuber material.

(1) Note. See this class, subclass 124.1, (5) Note for the definition of a carbohydrate.

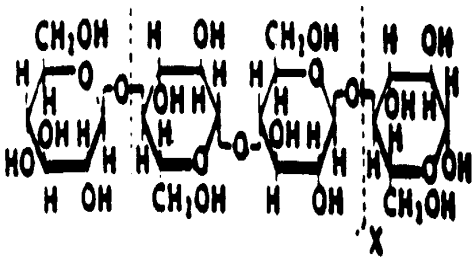
126.2 Lignocellulosic material (e.g., flock, sawdust, wood, etc.):
This subclass is indented under subclass 126.1. Compositions wherein the carbohydrate is found in a lignocellulosic material.

(1) Note. Lignocellulosic material is raw vegetable matter consisting primarily of cellulose, primarily of cellulose and lignin, or primarily of cellulose and lignin and minor amounts of carbohydrate and resin.

(2) Note. Lignin is a noncarbohydrate, polymeric substance found in wood and woody plants which functions as a natural plastic binder for the cellulose fibers. It is isolated directly from wood or wood

products or from the treatment of wood, e.g., waste sulfite liquor or black liquor. The structure of the lignin monomer is not completely known.

(3) Note. Cellulose is a carbohydrate consisting of repeating glucose units having the following structure:



126.3 Carbohydrate gum or cellulosic material:
This subclass is indented under subclass 126.1. Compositions wherein the carbohydrate is a carbohydrate gum or a chemically modified carbohydrate gum, cellulose or a chemically modified cellulose, or a naturally occurring material which has cellulose as one of its ingredients.

(1) Note. Carbohydrate gums include but are not limited to arabic, tragacanth, xanthan, galactomannan, irish moss, carrageenan, karaya, agar agar, algin, guar, xylogalactan, and glucomannan.

(2) Note. Carbohydrate gums are highly branched polysaccharides composed of two or more monosaccharides, and are exudations of plants produced by the plant to cover wounds and to prevent attack by organisms.

(3) Note. The term "derivative" herein is intended to include a chemical modification of the carbohydrate gum or cellulose wherein the carbon skeleton of the carbohydrate gum or cellulose is not destroyed or wherein the carbon skeleton of the carbohydrate gum or cellulose is indeterminate.

(4) Note. This subclass and indented subclasses provide for relatively pure cellulose (e.g., cotton linters, etc.), regenerated cellulose (e.g., cellophane and rayon), or chemically modified forms of cellulose (e.g., pyroxylin, viscose, etc.) for which there is no provision elsewhere.

127.1 With nonproteinaceous hetero ring compound:
This subclass is indented under subclass 125.1. Compositions which contain, in addition to the seed or tuber material, a nonproteinaceous organic compound having a hetero ring.

(1) Note. Hetero ring is a ring having only carbon and at least one atom from the group consisting of nitrogen, oxygen, sulfur, selenium and tellurium as ring members.

128.1 With nonproteinaceous phosphorus or boron compound or organic compound containing silicon:
This subclass is indented under subclass 125.1. Compositions which contain, in addition to the seed or tuber material, a nonproteinaceous compound of phosphorus or boron or an organic compound which has at least one silicon atom therein.

(1) Note. See this class, subclass 124.1, (4) Note for the definition of an organic compound.

129.1 With natural resin or derivative:
This subclass is indented under subclass 125.1. Compositions which contain, in addition to the seed or tuber material, a natural resin or a chemical modification of a natural resin.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, japan, japan varnish, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, and sulfurized resins, or salts thereof.

130.1 With terpene or derivative (e.g., pine oil, clove oil, spirits of turpentine, etc.):
This subclass is indented under subclass 125.1. Compositions which contain, in addition to the seed or tuber material, a terpene or a chemical modification of a terpene.

(1) Note. Terpene denotes a hydrocarbon having two or more isoprene units (C_5H_8). Most terpenes have carbon skeleton of 10, 15, 20, or 30 atoms.

(2) Note. The term "derivative" herein is intended to include a chemical modification of the terpene wherein the terpene structure is not destroyed or wherein the terpene structure is indeterminate.

131.1 With nonproteinaceous organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 125.1. Compositions which contain, in addition to the seed or tuber material, a nonproteinaceous organic compound which has at least one sulfur or nitrogen atom therein.

(1) Note. See this class, subclass 124.1, (4) Note for the definition of an organic compound.

132.1 With nonproteinaceous organic compound containing oxygen except wax:
This subclass is indented under subclass 125.1. Compositions which contain, in addition to the seed or tuber material, a nonproteinaceous organic compound which has at least one oxygen atom therein except wax.

132.2 The oxygen is part of a -C(=O)O- group:
This subclass is indented under subclass 132.1. Compositions wherein the nonproteinaceous organic compound containing oxygen has a carboxylate group (i.e., -C(=O)O-).

133.1 With bituminous or tarry residue, hydrocarbon, or naturally occurring wax:
This subclass is indented under subclass 125.1. Compositions which contain, in addition to the seed or tuber material, (a) a composition or compound having the characteristics of a tar or pitch no matter what the origin, (b) an organic compound consisting exclusively of the elements carbon and hydrogen, or (c) a naturally occurring low-melting organic mixture or compound of hydrocarbons or esters of fatty acids and alcohols having the characteristics of wax (solid at room temperature).

(1) Note. Examples of components included herein are alkanes, alkenes, olefins, montan wax, ceresin wax, carnauba wax, all asphalts, bitumens, pitches and tars from coal, mineral oil, cotton seed pitch and the residue from the destructive distillation of wood, and natural oil distillations.

134.1 With element or inorganic compound except water:
This subclass is indented under subclass 125.1. Compositions which contain, in addition to the seed or tuber material, elemental material or any inorganic compound except water.

(1) Note. See this class, subclass 124.1, (4) Note for the definition of an organic compound.

134.2 Elemental silicon or inorganic silicon compound:
This subclass is indented under subclass 134.1. Compositions wherein the element or the inorganic compound is elemental silicon or an inorganic compound containing silicon.

135.1 With carbohydrate or derivative:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, a carbohydrate or derivative.

(1) Note. See this class, subclass 124.1, (5) Note for the definition of a carbohydrate or its derivative.

136.1 Cellulosic material:
This subclass is indented under subclass 135.1. Compositions wherein the carbohydrate or derivative is cellulose, a derivative of cellulose, or a naturally occurring material which has cellulose as one of its ingredients.

(1) Note. See this class, subclass 126.2, (3) Note for the definition of a cellulose.

(2) Note. The term "cellulose derivative" herein is intended to include chemically modified cellulose wherein the carbon skeleton of the cellulose is unchanged or is indeterminate.

(3) Note. This subclass and indented subclasses provide for lignocellulosic material (e.g., wood, bark, etc.), relatively pure cellulose (e.g., cotton linters, etc.), regenerated cellulose (e.g., cellophane and rayon), or chemically modified forms of cellulose (e.g., pyroxylin, viscose, etc.) for which there is no provision elsewhere.

137.1 Lignocellulosic material (e.g., flock, sawdust, wood, etc.):
This subclass is indented under subclass 136.1. Compositions wherein the cellulosic material is a lignocellulosic material.

(1) Note. Lignocellulosic material is raw vegetable matter consisting primarily of cellulose, primarily of cellulose and lignin, or primarily of cellulose and lignin and minor amounts of carbohydrate and resin.

(2) Note. Lignin is a noncarbohydrate, polymeric substance found in wood and woody plants which functions as a natural plastic binder for the cellulose fibers. It is isolated directly from wood or wood products or from the treatment of wood, e.g., waste sulfite liquor or black liquor. The structure of the lignin monomer is not completely known.

137.2 Cork or peat:
This subclass is indented under subclass 137.1. Compositions wherein the lignocellulosic material is the exterior layer of the bark of the Cork Oak Tree or cork, per se, or partially decayed plant matter formed in water-saturated environments, such as bogs and marshes.

137.3 With nonproteinaceous noncarbohydrate hetero ring compound:
This subclass is indented under subclass 137.1. Compositions which contain, in addition to the lignocellulosic material, a nonproteinaceous noncarbohydrate organic compound having a hetero ring.

(1) Note. Hetero ring is a ring having only carbon and at least one atom from the group consisting of nitrogen, oxygen, sulfur, selenium and tellurium as ring members.

137.4 With nonproteinaceous phosphorus or boron compound or organic compound containing silicon:
This subclass is indented under subclass 137.1. Compositions which contain, in addition to the lignocellulosic material, a nonproteinaceous compound of phosphorus or boron or an organic compound which has at least one silicon atom therein.

(1) Note. See this class, subclass 124.1, (4) Note for the definition of an organic compound.

137.5 With natural resin or derivative:
This subclass is indented under subclass 137.1. Compositions which contain, in addition to the lignocellulosic material, a natural resin or a chemical modification of a natural resin.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, japan, japan varnish, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, and sulfurized resins, or salts thereof.

137.6 With nonproteinaceous organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 137.1. Compositions which contain, in addition to the lignocellulosic material, a nonproteinaceous organic compound which has at least one sulfur or nitrogen atom therein.

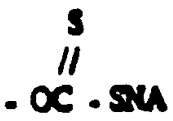
(1) Note. See this class, subclass 124.1, (4) Note for the definition of an organic compound.

137.7 With nonproteinaceous organic compound containing oxygen except wax:
This subclass is indented under subclass 137.1. Compositions which contain, in addition to the lignocellulosic material, a nonproteinaceous organic compound which has at least one oxygen atom therein except wax.

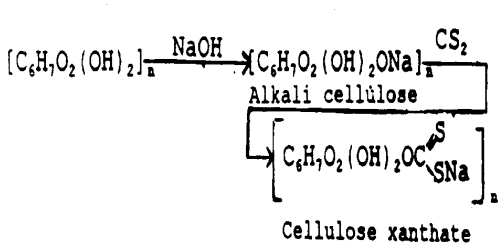
137.71 The oxygen is part of a -C(=O)O- group:
This subclass is indented under subclass 137.7. Compositions wherein the nonproteinaceous organic compound containing oxygen has a carboxylate group (i.e., -C(=O)O-).

138.1 Cellulose xanthate or viscose or cuprammonium cellulose:
This subclass is indented under subclass 136.1. Compositions wherein the cellulosic material is cellulose xanthate or viscose or cellulose in cupra-ammonium solution.

(1) Note. Cellulose xanthate or viscose is a cellulose derivative with the group:



(2) Note. The viscose process is based on the reaction of carbon disulfide with the sodium salt of cellulose to yield a xanthate, which forms a viscous colloidal solution in dilute aqueous alkali.



139.1 Cellulose ester or salt thereof:
This subclass is indented under subclass 136.1. Compositions wherein the cellulosic material is the product of the reaction of a hydroxyl group of cellulose with an acid.

(1) Note. The esterifying acid may be organic or inorganic.

139.2 With nonproteinaceous organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 139.1. Compositions which contain, in addition to the cellulose ester or salt thereof, a nonproteinaceous organic compound which has at least one sulfur or nitrogen atom therein.

(1) Note. See this class, subclass 124.1, (4) Note for the definition of an organic compound.

139.3 With nonproteinaceous organic compound containing oxygen except wax:
This subclass is indented under subclass 139.1. Compositions which contain, in addition to the cellulose ester or salt thereof, a nonproteinaceous organic compound which has at least one oxygen atom therein except wax.

140.1 Cellulose ether or salt thereof:
This subclass is indented under subclass 136.1. Compositions wherein the cellulosic material is a compound having the general formula ROR4, wherein RO- is the cellulose residue moiety and R4 is an ether-forming radical.

(1) Note. Cellulose ether is made by etherifying the hydroxyl groups of cellulose.

140.2 With natural resin or derivative:
This subclass is indented under subclass 140.1. Compositions which contain, in addition to the cellulose ether or salt thereof, a natural resin or a chemical modification of a natural resin.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, japan, japan varnish, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, and sulfurized resins, or salts thereof.

140.3 With nonproteinaceous organic compound containing oxygen except wax:
This subclass is indented under subclass 140.1. Compositions which contain, in addition to the cellulose ether or salt thereof, a nonproteinaceous organic compound which has at least one oxygen atom therein except wax.

141.1 With nonproteinaceous noncarbohydrate hetero ring compound:
This subclass is indented under subclass 136.1. Compositions which contain, in addition to the cellulosic material, a nonproteinaceous noncarbohydrate organic compound having a hetero ring.

(1) Note. Hetero ring is a ring having only carbon and at least one atom from the group consisting of nitrogen, oxygen, sulfur, selenium, and tellurium as ring members.

142.1 With nonproteinaceous organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 136.1. Compositions which contain, in addition to the cellulosic material, a nonproteinaceous organic compound which has at least one sulfur or nitrogen atom therein.

(1) Note. See this class, subclass 124.1, (4) Note for the definition of an organic compound.

143.1 With nonproteinaceous organic compound containing oxygen except wax:
This subclass is indented under subclass 136.1. Compositions which contain, in addition to the cellulosic material, a nonproteinaceous organic compound which has at least one oxygen atom therein except wax.

144.1 Dextrin or derivative, carbohydrate gum or derivative (e.g., arabic, tragacanth, guar, karaya, agar agar, algin, irish moss, etc.):
This subclass is indented under subclass 135.1. Compositions wherein the carbohydrate is dextrin, carbohydrate gum, or derivative thereof.

(1) Note. Dextrin consists of various gummy polysaccharides produced by thermal or acid degradation of starch.

(2) Note. Carbohydrate gums are highly branched polysaccharides composed of two or more monosaccharides, and are exudations of plants produced by the plant to cover wounds and to prevent attack by organisms.

(3) Note. Carbohydrate gums include but are not limited to arabic, tragacanth, xanthan, galactomannan, irish moss, carrageenan, karaya, agar agar, algin, guar, xylogalactan, and glucomannan.

(4) Note. Examples of derivatives included herein are esterified, etherified, sulfonated, and borated.

(5) Note. The term “derivative” in this and indented subclasses is intended to include a chemical modification of the carbohydrate gum or dextrin wherein the carbon skeleton of the carbohydrate gum or dextrin is not destroyed or wherein the carbon skeleton of the carbohydrate gum or dextrin is indeterminate.

144.2 With nonproteinaceous phosphorus or boron compound or organic compound containing silicon:
This subclass is indented under subclass 144.1. Compositions which contain, in addition to the dextrin or derivative thereof, the carbohydrate gum or derivative thereof, a nonproteinaceous compound of phosphorus or boron or an organic compound which has at least one silicon atom therein.

(1) Note. See this class, subclass 124.1, (4) Note for the definition of an organic compound.

144.3 With natural resin or derivative:
This subclass is indented under subclass 144.1. Compositions which contain, in addition to the dextrin or derivative thereof, the carbohydrate gum or derivative thereof, a natural resin or a chemical modification of a natural resin.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, japan, japan varnish, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, and sulfurized resins, or salts thereof.

144.4 With lanolin, fat, or fatty oil:
This subclass is indented under subclass 144.1. Compositions which contain, in addition to the dextrin or derivative thereof, the carbohydrate gum or derivative thereof, a fat, fatty oil, or lanolin.

(1) Note. Definitions are found in the Glossary below.

GLOSSARY

FAT, FATTY OIL

The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

LANOLIN

Cholesterol esters of higher fatty acids.

144.5 With terpene or derivative:
This subclass is indented under subclass 144.1. Compositions which contain, in addition to the dextrin or derivative thereof, the carbohydrate gum or derivative thereof, a terpene or a chemical modification of a terpene.

(1) Note. Terpene denotes a hydrocarbon having two or more isoprene units (C_5H_8). Most terpenes have carbon skeleton of 10, 15, 20, or 30 atoms.

(3) Note. The term “derivative” herein is intended to include a chemical modification of the terpene wherein the terpene structure is not destroyed or wherein the terpene structure is indeterminate.

144.6 With nonproteinaceous organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 144.1. Compositions which contain, in addition to the dextrin or derivative thereof, the carbohydrate gum or derivative thereof, a nonproteinaceous organic compound which has at least one sulfur or nitrogen atom therein.

(1) Note. See this class, subclass 124.1, (4) Note for the definition of an organic compound.

144.7 With nonproteinaceous organic compound containing oxygen except wax:
This subclass is indented under subclass 144.1. Compositions which contain, in addition to the dextrin or derivative thereof, the carbohydrate gum or derivative thereof, a nonproteinaceous organic compound which has at least one oxygen atom therein except wax.

144.71 The oxygen is part of a -C(=O)O- group:
This subclass is indented under subclass 144.7. Compositions wherein the nonproteinaceous organic compound containing oxygen has a carboxylate group (i.e., -C(=O)O-).

144.72 Dihydric or polyhydric alcohol:
This subclass is indented under subclass 144.7. Compositions wherein the nonproteinaceous organic compound containing oxygen is an alcohol having two or more -OH groups.

145.1 Starch or derivative:
This subclass is indented under subclass 135.1. Compositions wherein the carbohydrate is a compound containing amylose and amylopectin as its main components or derivatives thereof.

(1) Note. Starches are heterogenous in that the amylose and amylopectin occur in different ratios to each other.

(2) Note. Included herein are starch fractions such as amylose and amylopectin as well as modified starches (e.g., thin boiling starches, etc.).

145.2 With natural resin or derivative:
This subclass is indented under subclass 145.1. Compositions which contain, in addition to the starch or derivative thereof, a natural resin or a chemical modification of a natural resin.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, japan, japan varnish, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, and sulfurized resins, or salts thereof.

145.3 With lanolin, lecithin, fat, or fatty oil:
This subclass is indented under subclass 145.1. Compositions which contain, in addition to the starch or derivative thereof, a fat, fatty oil, lecithin, or lanolin.

(1) Note. Definitions are found in the Glossary below.

GLOSSARY

FAT, FATTY OIL

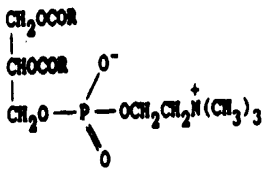
The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

LANOLIN

Cholesterol esters of higher fatty acids;

LECITHIN

A mixture of the diglycerides of stearic, palmitic, and oleic acids, linked to the choline ester of phosphoric acid. Lecithin has the following structure [wherein the R's are the same or different, and are acyclic hydrocarbon radicals of at least seven carbon atoms chain length]:



145.4 With nonproteinaceous organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 145.1. Compositions which contain, in addition to the starch or derivative thereof, a nonproteinaceous organic compound which has at least one sulfur or nitrogen atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.1, (4) Note for the definition of an organic compound.

145.5 With nonproteinaceous organic compound containing oxygen except wax:
This subclass is indented under subclass 145.1. Compositions which contain, in addition to the starch or derivative thereof, a nonproteinaceous organic compound which has at least one oxygen atom therein except wax.

146.1 Sugar or hydrogenated sugar (e.g., sorbitol, maltitol, xylitol, etc.):
This subclass is indented under subclass 135.1. Compositions wherein the carbohydrate is a sugar or a sugar that has undergone hydrogenation.

(1) Note. Sugar is a carbohydrate which has one or more saccharide units. The ending of the names of most sugars is *-ose*.

(2) Note. Examples of sugars included herein are sucrose, glucose, fructose, and maltose.

146.2 With natural resin or derivative:
This subclass is indented under subclass 146.1. Compositions which contain, in addition to the sugar or the hydrogenated sugar, a natural resin or a chemical modification of a natural resin.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, japan, japan varnish, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, and sulfurized resins, or salts thereof.

146.3 With lanolin, lecithin, fat, or fatty oil:
This subclass is indented under subclass 146.1. Compositions which contain, in addition to the sugar or the hydrogenated sugar, a fat, fatty oil, lecithin, or lanolin.

(1) Note. Definitions are found in the Glossary below.

GLOSSARY

FAT, FATTY OIL

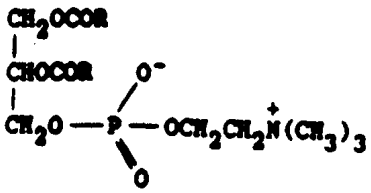
The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

LANOLIN

Cholesterol esters of higher fatty acids;

LECITHIN

A mixture of the diglycerides of stearic, palmitic, and oleic acids, linked to the choline ester of phosphoric acid. Lecithin has the following structure [wherein the R's are the same or different, and are acyclic hydrocarbon radicals of at least seven carbon atoms chain length]:



146.4 With nonproteinaceous organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 146.1. Compositions which contain, in addition to the sugar or the hydrogenated sugar, a nonproteinaceous organic compound which has at least one sulfur or nitrogen atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.1, (4) Note for the definition of an organic compound.

146.5 With nonproteinaceous organic compound containing oxygen except wax:
This subclass is indented under subclass 146.1. Compositions which contain, in addition to the sugar or the hydrogenated sugar, a nonproteinaceous organic compound which has at least one oxygen atom therein except wax.

146.51 The oxygen is part of a -C(=O)O- group:
This subclass is indented under subclass 146.5. Compositions wherein the nonproteinaceous organic compound containing oxygen has a carboxylate group (i.e., -C(=O)O-).

147.1 With natural resin or derivative:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, a natural resin or a chemical modification of a natural resin.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, japan, japan varnish, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, and sulfurized resins, or salts thereof.

147.2 With nonproteinaceous phosphorus or boron compound or organic compound containing silicon:
This subclass is indented under subclass 147.1. Compositions which contain, in addition to the natural resin or derivative thereof, a nonproteinaceous compound of phosphorus or boron or an organic compound which has at least one silicon atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.1, (4) Note for the definition of an organic compound.

147.3 With lanolin, fat, or fatty oil:
This subclass is indented under subclass 147.1. Compositions which contain, in addition to the natural resin or derivative thereof, a fat, fatty oil, or lanolin.

(1) Note. Definitions can be found in the Glossary below.

GLOSSARY

FAT, FATTY OIL

The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

LANOLIN

Cholesterol esters of higher fatty acids;

147.4 With terpene or derivative:
This subclass is indented under subclass 147.1. Compositions which contain, in addition to the natural resin or derivative thereof, a terpene or a chemical modification of a terpene.

(1) Note. Terpene denotes a hydrocarbon having two or more isoprene units (C_5H_8). Most terpenes have carbon skeleton of 10, 15, 20, or 30 atoms.

(3) Note. The term “derivative” herein is intended to include a chemical modification of the terpene wherein the terpene structure is not destroyed or wherein the terpene structure is indeterminate.

147.5 With nonproteinaceous organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 147.1. Compositions which contain, in addition to the natural resin or derivative thereof, a nonproteinaceous organic compound which has at least one sulfur or nitrogen atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.1, (4) Note for the definition of an organic compound.

147.6 With nonproteinaceous organic compound containing oxygen except wax:
This subclass is indented under subclass 147.1. Compositions which contain, in addition to the natural resin or derivative thereof, a nonproteinaceous organic compound which has at least one oxygen atom therein except wax.

147.61 The oxygen is part of a -C(=O)O- group:
This subclass is indented under subclass 147.6. Compositions wherein the nonproteinaceous organic compound containing oxygen has a carboxylate group (i.e., -C(=O)O-).

148.1 With lanolin, lecithin, fat, or fatty oil:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, a fat, fatty oil, lanolin, or lecithin.

(1) Note. Definitions are found in the Glossary below.

GLOSSARY

FAT, FATTY OIL

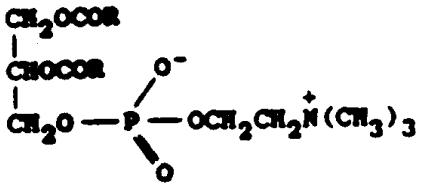
The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

LANOLIN

Cholesterol esters of higher fatty acids;

LECITHIN

A mixture of the diglycerides of stearic, palmitic, and oleic acids, linked to the choline ester of phosphoric acid. Lecithin has the following structure [wherein the R's are the same or different, and are acyclic hydrocarbon radicals of at least seven carbon atoms chain length]:



148.2 With nonproteinaceous phosphorus or boron compound or organic compound containing silicon:
This subclass is indented under subclass 148.1. Compositions which contain, in addition to the lanolin, lecithin, fat, or fatty oil, a nonproteinaceous compound of phosphorus or boron or an organic compound which has at least one silicon atom therein.

(1) Note. See this class, subclass 124.1, (4) Note for the definition of an organic compound.

148.3 With terpene or derivative:
This subclass is indented under subclass 148.1. Compositions which contain, in addition to the lanolin, lecithin, fat, or fatty oil, a terpene or a chemical modification of a terpene.

(1) Note. Terpene denotes a hydrocarbon having two or more isoprene units (C_5H_8). Most terpenes have carbon skeleton of 10, 15, 20, or 30 atoms.

(2) Note. The term "derivative" herein is intended to include a chemical modification of the terpene wherein the terpene structure is not destroyed or wherein the terpene structure is indeterminate.

148.4 With nonproteinaceous organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 145.1. Compositions which contain, in addition to the lanolin, lecithin, fat, or fatty oil, a nonproteinaceous organic compound which has at least one sulfur or nitrogen atom therein.

(1) Note. See this class, subclass 124.1, (4) Note for the definition of an organic compound.

148.5 With nonproteinaceous organic compound containing oxygen except wax:
This subclass is indented under subclass 148.1. Compositions which contain, in addition to the lanolin, lecithin, fat, or fatty oil, a nonproteinaceous organic compound which has at least one oxygen atom therein except wax.

148.51 The oxygen is part of a -C(=O)O- group:
This subclass is indented under subclass 148.5. Compositions wherein the nonproteinaceous organic compound containing oxygen has a carboxylate (-C(=O)O-) group.

148.52 Dihydric or polyhydric alcohol:
This subclass is indented under subclass 148.5. Compositions wherein the nonproteinaceous organic compound containing oxygen is an alcohol with two or more hydroxyl (-OH) groups.

149.1 With terpene or derivative:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, a terpene or a chemical modification of a terpene.

(1) Note. Terpene denotes a hydrocarbon having two or more isoprene units (C_5H_8). Most terpenes have carbon skeleton of 10, 15, 20, or 30 atoms.

(3) Note. The term "derivative" herein is intended to include a chemical modification of the terpene wherein the terpene structure is not destroyed or wherein the terpene structure is indeterminate.

150.1 With nonproteinaceous hetero ring compound:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, a nonproteinaceous organic compound having a hetero ring.

(1) Note. Hetero ring is a ring having only carbon and at least one atom from the group consisting of nitrogen, oxygen, sulfur, selenium and tellurium as ring members.

150.2 With nonproteinaceous organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 150.1. Compositions which contain, in addition to the nonproteinaceous hetero ring compound, a nonproteinaceous organic compound which has at least one sulfur or nitrogen atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.1, (4) Note for the definition of an organic compound.

150.3 With nonproteinaceous organic compound containing oxygen except wax:
This subclass is indented under subclass 150.1. Compositions which contain, in addition to the nonproteinaceous hetero ring compound, a nonproteinaceous organic compound which has at least one oxygen atom therein except wax.

151.1 With nonproteinaceous phosphorus compound:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, a nonproteinaceous compound of phosphorus.

151.2 With nonproteinaceous organic compound containing oxygen:
This subclass is indented under subclass 151.1. Compositions which contain, in addition to the nonproteinaceous phosphorus compound, a nonproteinaceous organic compound which has at least one oxygen atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.1, (4) Note for the definition of an organic compound.

152.1 With nonproteinaceous boron compound:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, a nonproteinaceous compound of boron.

153.1 With organic compound containing silicon:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, an organic compound which has at least one silicon atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.1, (4) Note for the definition of an organic compound.

154.11 With nonproteinaceous organic compound containing sulfur:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, a nonproteinaceous organic compound which has at least one sulfur atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.1, (4) Note for the definition of an organic compound.

154.2 Carbon double bonded directly to the sulfur:
This subclass is indented under subclass 154.11. Compositions wherein the sulfur is double bonded directly to a carbon.

154.3 Nitrogen and sulfur in the same compound:
This subclass is indented under subclass 154.11. Compositions wherein the nonproteinaceous organic compound has both nitrogen and sulfur.

154.4 Sulfonated compound of indeterminate structure:
This subclass is indented under subclass 154.11. Compositions wherein the nonproteinaceous organic compound containing sulfur is a sulfonation chemical modification of indeterminate structure.

155.1 With nonproteinaceous organic compound containing nitrogen:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, a nonproteinaceous organic compound which has at least one nitrogen atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.1, (4) Note for the definition of an organic compound.

155.2 Nitrogen and oxygen in the same compound:
This subclass is indented under subclass 155.1. Compositions wherein the nonproteinaceous organic compound has both nitrogen and oxygen.

155.21 Nitrogen single bonded directly to carbon of a -C(=O)- group:
This subclass is indented under subclass 155.2. Compositions wherein the nonproteinaceous organic compound has the carbon of a -C(=O)- group bonded directly to the nitrogen by a single bond.

155.22 Alkanol amine or salt thereof:
This subclass is indented under subclass 155.2. Compositions wherein the nonproteinaceous organic compound has an amino nitrogen attached directly to the carbon of an alkyl alcohol, or salt thereof.

155.23 Tertiary amine oxide:
This subclass is indented under subclass 155.2. Compositions wherein the nonproteinaceous organic compound has an oxygen attached to tertiary nitrogen by ionic bonding (i.e., $R_3N^+O^-$, where R is an organic group).

156.1 With nonproteinaceous organic compound containing oxygen except wax:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, a nonproteinaceous organic compound which has at least one oxygen atom therein except wax.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.1, (4) Note for the definition of an organic compound.

156.2 The oxygen is part of a -C(=O)O- group:
This subclass is indented under subclass 156.1. Compositions wherein the nonproteinaceous organic compound containing oxygen has a carboxylate group (i.e., -C(=O)O-).

156.21 Carbon bonded directly to the single bonded oxygen of the -C(=O)O- group:
This subclass is indented under subclass 156.2. Compositions wherein the nonproteinaceous organic -C(=O)O- group containing compound

has the single-bonded oxygen of the -C(=O)O- group single bonded to an additional carbon atom.

156.22 Plural -C(=O)O- groups:
This subclass is indented under subclass 156.21. Compositions wherein the nonproteinaceous organic -C(=O)O- group containing compound has two or more carboxylate groups.

156.23 Metal salt:
This subclass is indented under subclass 156.2. Compositions wherein the carboxyl hydrogen of a carboxylic acid is replaced by a metal.

156.24 Metal salt of higher fatty acid:
This subclass is indented under subclass 156.23. Compositions wherein the carboxyl hydrogen of a higher fatty acid is replaced by a metal.

(1) Note. By "higher fatty acid" is meant aliphatic monocarboxylic acid containing an unbroken chain of at least seven carbon atoms bonded to a carboxyl group (e.g., lauric, palmitic, stearic, oleic, ricinoleic, linoleic, behenolic, etc.) Where there are several unbroken chains of carbon atoms bonded to the -C(=O)O- group, one of the chains must contain at least seven carbon atoms.

156.25 With additional nonproteinaceous organic compound containing oxygen:
This subclass is indented under subclass 156.2. Compositions which contain, in addition to the organic compound containing the carboxylate group, a nonproteinaceous organic compound which has at least one oxygen atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.1, (4) Note for the definition of an organic compound.

156.3 Carbonyl group containing:
This subclass is indented under subclass 156.1. Compositions wherein the nonproteinaceous organic compound containing oxygen has a carbonyl group (i.e., -C(=O)-)

156.31 With additional nonproteinaceous organic compound containing oxygen:
This subclass is indented under subclass 156.3. Compositions which contain, in addition to the organic compound containing the carbonyl group, a nonproteinaceous organic compound which has at least one oxygen atom therein.

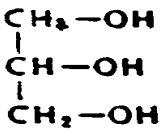
SEE OR SEARCH THIS CLASS, SUBCLASS:
124.1, (4) Note for the definition of an organic compound.

156.4 Ether except dialkylene or polyalkylene glycol:
This subclass is indented under subclass 156.1. Compositions wherein the nonproteinaceous organic compound containing oxygen has an ether group (i.e.,-C-O-C-) except dialkylene or polyalkylene glycol.

SEE OR SEARCH THIS CLASS, SUBCLASS:
156.5, for compositions containing dialkylene or polyalkylene glycol.

156.5 Dihydric or polyhydric alcohol:
This subclass is indented under subclass 156.1. Compositions wherein the nonproteinaceous organic compound containing oxygen is an alcohol with two or more hydroxyl (-OH) groups.

156.51 Glycerol:
This subclass is indented under subclass 156.5. Compositions wherein the nonproteinaceous organic compound containing oxygen is a trihydric alcohol with the following structure:



157.1 With bituminous or tarry residue, hydrocarbon, or naturally occurring wax:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, (a) a composition or compound having the characteristics of a tar or

pitch no matter what the origin, (b) an organic compound consisting exclusively of the elements carbon and hydrogen, or (c) a naturally occurring low-melting organic mixture or compound of hydrocarbons or esters of fatty acids and alcohols having the characteristics of wax (solid at room temperature).

(1) Note. Examples of components included herein are alkanes, alkenes, olefins, montan wax, ceresin wax, carnauba wax, all asphalts, bitumens, pitches and tars from coal, mineral oil, cotton seed pitch and the residue from the destructive distillation of wood, and natural oil distillations.

157.2 With element or inorganic compound except water:
This subclass is indented under subclass 124.1. Compositions which contain, in addition to the proteinaceous material, elemental material or any inorganic compound except water.

(1) Note. See this class, subclass 124.1, (4) Note for the definition of an organic compound.

157.3 Mineral acid (e.g., sulfuric, nitric, etc.):
This subclass is indented under subclass 157.2. Compositions wherein the inorganic compound is an inorganic acid.

(1). Note. Mineral acids include but are not limited to sulfuric, nitric, hydrochloric, and phosphoric acids.

(2) Note. All mineral acids are highly irritant and corrosive to human tissue.

157.4 Ammonium hydroxide (i.e., ammonium hydrate, aqua ammonia, ammonia solution) or ammonia:
This subclass is indented under subclass 157.2. Compositions wherein the inorganic compound is ammonium hydroxide (NH_4OH) or anhydrous ammonia (NH_3).

157.5 Elemental sulfur or inorganic sulfur compound:
This subclass is indented under subclass 157.2. Compositions wherein the element or inorganic compound is elemental sulfur or an inorganic compound containing sulfur.

157.51 Aluminum sulfate (e.g., alum, pearl alum, cake alum, etc.):
This subclass is indented under subclass 157.5. Compositions wherein the inorganic compound containing sulfur is $Al_2(SO_4)_3$.

157.6 Elemental halogen, inorganic halogen compound, or inorganic nitrate compound:
This subclass is indented under subclass 157.2. Compositions wherein the inorganic compound or element is an inorganic compound containing halogen or elemental halogen or an inorganic compound having a nitrate (NO_3^-) radical.

157.7 Elemental silicon or inorganic silicon compound:
This subclass is indented under subclass 157.2. Compositions wherein the element or inorganic compound is elemental silicon or an inorganic compound containing silicon.

157.71 Clay:
This subclass is indented under subclass 157.7. Compositions wherein the inorganic compound containing silicon is a naturally occurring, fine grained, earthy, hydrated aluminum silicate containing composition; i.e., clay.

(1) Note. The term “clay” includes materials commonly known as attapulgite, bentonite, fuller's earth, halloysite, illite, kaolinite, and montmorillonite.

157.8 Metal oxide:
This subclass is indented under subclass 157.2. Compositions wherein the inorganic compound is a metal oxide.

157.9 Alkali or alkaline earth metal hydroxide (e.g., caustic soda, caustic alkali, caustic lime, etc.):
This subclass is indented under subclass 157.2. Compositions wherein the inorganic compound is an alkali metal hydroxide or an alkaline earth metal hydroxide.

(1) Note. The alkali metals are lithium, sodium, potassium, rubidium, cesium, and francium.

(2) Note. The alkaline earth metals are magnesium, calcium, strontium, barium, and radium.

158.1 Albumin or derivative:
This subclass is indented under subclass 124.1. Compositions wherein the proteinaceous material is albumin or a chemical modification of albumin.

(1) Note. Albumins are proteins characterized by heat coagulability and solubility in dilute salt solution. The most notable albumins are ovalbumin, serum albumin, lactalbumin, grain and soybean albumins.

(2) Note. Example of derivative included herein is the metal salt of the albumin.

159.1 Casein or derivative:
This subclass is indented under subclass 124.1. Compositions wherein the proteinaceous material is casein or a chemical modification of casein.

(1) Note. Casein is the principal protein in milk. It is a phosphoprotein consisting of about 15 amino acids and has a molecular weight ranging from 75,000 to 375,000.

(2) Note. Example of derivative included herein is the metal salt of the casein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.2, for compositions containing milk.

160.1 Gelatin or collagen or derivative (e.g., glue, etc.):
This subclass is indented under subclass 124.1. Compositions wherein the proteinaceous material is gelatin, collagen, or a chemical modification of gelatin or collagen.

(1) Note. Gelatin is derived from collagen by boiling skin, tendons, ligaments, bones, etc. with water.

(2) Note. Collagen is a protein with a molecular weight of about 130,000. It is the main constituent of skin, connective tissue, and the organic substance of bones and teeth.

SEE OR SEARCH THIS CLASS, SUBCLASS:
124.4+, for compositions containing tissue derived from multicellular animal.

161.1 Prolamine or derivative (e.g., zein, etc.):
This subclass is indented under subclass 124.1. Compositions wherein the proteinaceous material is prolamine or derivative thereof.

(1) Note. Prolamines are those proteins contained in cereal grains which are soluble in strong alcohol and insoluble in water. Prolamine from corn is known as zein; from wheat, gleadin; from rye, hordein.

162.1 Carbohydrate or derivative containing:
Coating or plastic composition containing a carbohydrate or derivative thereof.

(1) Note. The term “carbohydrate or derivative” in this and indented subclasses corresponds to class 536 subclass 1.11 definition; i.e., saccharide whose monomeric units are polyhydroxy mono-aldehydes or polyhydroxy mono-ketones, having the formula $C_n(H_2O)_n$ (wherein n is five or six), or the corresponding cyclic hemiacetals thereof; or the reaction derivatives thereof in which the carbon skeleton and the carbonyl function or hemi-acetal function of the saccharide unit are not destroyed.

(2) Note. The expression “organic compound” in this and indented subclasses

corresponds to the Class 260 class definition; i.e., compounds containing carbon, which are further characterized by the presence in a molecule thereof of (a) two carbon atoms bonded together, (b) one atom of carbon bonded to at least one atom of hydrogen or halogen, or (c) one atom of carbon bonded to at least one atom of nitrogen by a single or double bond, with the proviso that HCN, CN-CN, HNCO, HNCS, cyanamide, cyanogen halides, fulminic acid, metal carbides, and graphite are excluded from being organic compounds.

SEE OR SEARCH CLASS:

127, Sugar, Starch, and Carbohydrates, appropriate subclass for processes of production, purification, extraction, etc., of starch and sugar, and products of such processes.

428, Stock Material or Miscellaneous Articles, subclasses 532+ for a nonstructural laminate including a layer comprising carbohydrate.

435, Chemistry: Molecular Biology and Microbiology, appropriate subclass, for the liberation or treatment of carbohydrates by fermentation processes.

520, Synthetic Resins or Natural Rubbers, Class 523, subclasses 447+ and 509, Class 524, subclasses 9+, 27+ 702+, 716, and 732+ for a carbohydrate or derivative nonreactant material in admixture with a synthetic resin or natural rubber and Classes 525, 526, 527, and 528 for a carbohydrate or derivative containing synthetic resin, and see Class 520, subclass 1 for an explanation of the type of polymer derived from a protein reactant which is proper for Class 520 (Note 9, C).

536, Organic Compounds, subclasses 1.11+, for a carbohydrate prepared by a synthesis other than hydrolytic conversion of a carbohydrate.

162.2 Aminopolysaccharide (e.g., heparin, glycosamine, mucopolysaccharide, chitin, hyaluronic acid, etc.):

This subclass is indented under subclass 162.1. Compositions wherein the carbohydrate is a polysaccharide with an amino group therein.

162.5 With lignocellulosic material (i.e., mixture of a lignocellulosic material and a carbohydrate material which is other than a lignocellulosic material or a component thereof):

This subclass is indented under subclass 162.1. Compositions which contain a lignocellulosic material in addition to the carbohydrate or derivative whereby the carbohydrate or derivative is not a lignocellulosic material or a constituent thereof.

(1) Note. Lignocellulosic material is raw vegetable matter consisting primarily of cellulose, primarily of cellulose and lignin, or primarily of cellulose and lignin and minor amounts of carbohydrate and resin. Lignocellulosic materials include but are not limited to: straw, bagasse, corn stalk, grass, wood pulp, wood, bark.

(2) Note. Lignin is a noncarbohydrate, polymeric substance found in wood and woody plants which functions as a natural plastic binder for the cellulose fibers. It is isolated directly from wood or wood products or from the treatment of wood, e.g., waste sulfite liquor or black liquor. The structure of the lignin monomer is not completely known.

(3) Note. See this class, subclass 163.01 for definition of cellulose.

SEE OR SEARCH THIS CLASS, SUBCLASS:

162.6, 162.7, 162.8, and 162.9 for compositions containing carbohydrate or derivative and cellulose xanthate, cellulose ester or salt thereof, cellulose ether or salt thereof, or cellulose or derivative.

164.01+, for compositions containing one or more lignocellulosic materials.

162.51 The carbohydrate is starch:

This subclass is indented under subclass 162.5. Compositions wherein the carbohydrate is a polysaccharide in plants (e.g., corn, potatoes, tapioca, rice, wheat, etc.) which has amylose and amylopectin as the main ingredients.

(1) Note. Starches are heterogenous in that the amylose and amylopectin occur in different ratios to each other.

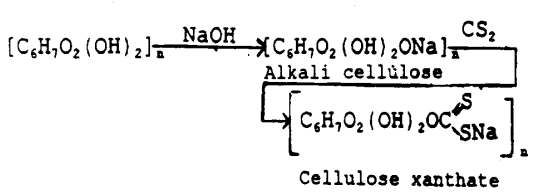
(2) Note. Included herein are starch fractions such as amylose and amylopectin as well as modified starches (e.g., thin boiling starches, etc.).

162.6 With cellulose xanthate or viscose (i.e., mixture of cellulose xanthate or viscose and a carbohydrate material which is other than cellulose xanthate or viscose):

This subclass is indented under subclass 162.1. Compositions which contain cellulose xanthate or viscose in addition to the carbohydrate or derivative whereby the carbohydrate or derivative is not cellulose xanthate or viscose.

(1) Note. Cellulose xanthate or viscose is a cellulose derivative with the group:

(2) Note. The viscose process is based on the reaction of carbon disulfide with the sodium salt of cellulose to yield a xanthate, which forms a viscous colloidal solution in dilute aqueous alkali.



SEE OR SEARCH THIS CLASS, SUBCLASS:

162.5, 162.7, 162.8, and 162.9 for compositions containing carbohydrate or derivative and lignocellulosic material, cellulose ester or salt, cellulose ether or salt, or cellulosic material.

162.7 With cellulose ester or salt thereof (i.e., mixture of (A) a cellulose ester or salt thereof and (B) a carbohydrate material which is other than cellulose ester or salt of the same acid as in (A) differing only in the degree of esterification):

This subclass is indented under subclass 162.1. Compositions which contain (A) a cellulose ester or salt thereof in addition to (B) the carbohydrate or derivative thereof whereby the carbohydrate or derivative can not be a cellulose ester or salt of the same acid as in (A) differing only in the degree of esterification.

(1) Note. See this class, subclass 168.01 for definition of cellulose ester or salt thereof.

(2) Note. This subclass provides for compositions containing both a and b as defined below:

(a)cellulose ester such as: (1) cellulose ester of a single acid (e.g., cellulose acetate, cellulose propionate, etc.), (2) cellulose ester of mixed acids (e.g., cellulose butyrate propionate, cellulose propionate isobutyrate, etc.), or (3) mixture of cellulose esters of the same acid differ only in the degree of esterification (e.g., pyroxylin - mixture of cellulose tetranitrate and cellulose trinitrate, mixture of cellulose acetate and cellulose triacetate, etc.), and

(b)carbohydrate or derivative.

SEE OR SEARCH THIS CLASS, SUBCLASS:

162.5, 162.6, 162.8, and 162.9, for compositions containing carbohydrate or derivative and lignocellulosic material, cellulose xanthate, cellulose ether or salt, or cellulosic material.

162.71, for compositions containing cellulose ester (e.g., cellulose nitrate, cellulose acetate, etc.) and a cellulosic material (e.g., carboxymethyl cellulose, ethyl cellulose, etc.).

162.72, for compositions containing two or more different cellulose esters (e.g., cellulose nitrate and cellulose acetate, cellulose propionate and cellulose

acetate, cellulose propionate and cellulose propionate isobutyrate, etc.).

169.01+, for compositions containing pyroxylin as the only carbohydrate or derivative and the only cellulose ester or derivative.

162.71 The carbohydrate is a cellulosic material:
This subclass is indented under subclass 162.7. Compositions wherein the carbohydrate derivative is cellulose, chemically modified cellulose wherein the carbon skeleton of the cellulose is not destroyed, or a naturally occurring material which has cellulose as one of its ingredients.

SEE OR SEARCH THIS CLASS, SUBCLASS:

163.01, for definition of cellulose or derivative thereof.

162.72 Diverse cellulose ester or salt thereof (i.e., mixture of two or more cellulose esters or salts of diverse acids or mixture of two or more cellulose mixed esters or salts of different diverse acids groups):
This subclass is indented under subclass 162.71. Compositions which contain (A) mixture of two or more cellulose esters or salts thereof whereby at least one cellulose ester or salt has a diverse acid group or (B) mixture of two or more mixed cellulose esters or salts thereof whereby at least one mixed cellulose ester or salt has a diverse mixed acids group.

(1) Note. Cellulose ester is a product of a reaction of a hydroxyl group of cellulose with an acid. The esterifying acid may be organic or inorganic.

(2) Note. This subclass provides for compositions containing two or more different cellulose esters (e.g., cellulose nitrate and cellulose acetate, cellulose propionate and cellulose acetate, cellulose propionate and cellulose propionate isobutyrate, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:

168.01+, for compositions containing cellulose mixed esters or mixture of cellulose esters of the same acid different only in the degree of esterification (e.g., cellulose acetate propionate, cellulose propionate and cellulose tripropionate, etc.).

171.1, for compositions containing mixture of cellulose acetate of differing degree of esterification (e.g., cellulose acetate and cellulose triacetate, etc.).

162.8 With cellulose ether or salt thereof (i.e., mixture of (A) a cellulose ether or salt thereof and (B) a carbohydrate material which is other than cellulose ether or salt of the same etherifying radical as in (A) differing only in the degree of etherification):
This subclass is indented under subclass 162.1. Compositions which contain (A) a cellulose ether or salt thereof in addition to (B) the carbohydrate or derivative whereby the carbohydrate or derivative can not be a cellulose ether or salt of the same etherifying radical as in (A) differing only in the degree of etherification.

(1) Note. Cellulose ether is a cellulose derivative having a general formula ROR4, wherein RO- is the cellulose residue moiety and R4 is an ether forming radical.

(2) Note. Cellulose ether is made by etherifying the hydroxyl groups of cellulose.

SEE OR SEARCH THIS CLASS, SUBCLASS:

162.82, for compositions containing mixture of cellulose ethers.

162.81 The carbohydrate is starch or derivative:
This subclass is indented under subclass 162.8. Compositions wherein the carbohydrate is a polysaccharide in plants (e.g., corn, potatoes, tapioca, rice, wheat, etc.) which has amylose and amylopectin as the main ingredients or derivatives thereof.

(1) Note. Starches are heterogenous in that the amylose and amylopectin occur in different ratios to each other.

(2) Note. Included herein are starch fractions such as amylose and amylopectin as well as modified starches (e.g., thin boiling starches, etc.).

162.82 The carbohydrate is diverse cellulose ether or salt thereof (i.e., mixture of two or more cellulose ethers or salts of diverse etherifying radicals or mixture of two or more cellulose mixed ethers or salts of different diverse etherifying radical groups):

This subclass is indented under subclass 162.8. Compositions wherein the carbohydrate derivative is a diverse cellulose ether or salt thereof or a diverse cellulose mixed ethers or salts thereof.

(1) Note. This subclass provides for compositions containing two or more different cellulose ethers or mixed ethers or salts thereof (e.g., methyl cellulose and ethyl cellulose, methyl propyl cellulose and ethyl butyl cellulose, etc.).

162.9 With cellulosic material (i.e., mixture of a cellulosic material and a carbohydrate material which is other than a cellulosic material):

This subclass is indented under subclass 162.1. Compositions which contain a) a naturally occurring material which has cellulose as one of its ingredients, cellulose, or a derivative thereof, and b) a carbohydrate or derivative thereof whereby the carbohydrate or derivative is not a cellulosic material.

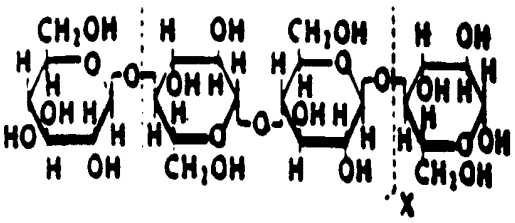
(1) Note. See subclass 163.01 for definition of cellulose or derivative thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:

162.5, 162.6, 162.7, and 162.8, for compositions containing cellulose or other derivatives of cellulose and additional carbohydrate or derivative.

163.01 Cellulosic material:

This subclass is indented under subclass 162.1. Compositions wherein the carbohydrate is cellulose with the following structure, below, or the reaction products wherein the carbon skeleton of the cellulose is not destroyed or a naturally occurring material which has cellulose as one of its ingredients.



(1) Note. This subclass and indented subclasses provide for lignocellulosic material (e.g., wood, bark, etc.), relatively pure cellulose (e.g., cotton linters, etc.), regenerated cellulose (e.g., cellophane and rayon), or chemically modified forms of cellulose (e.g., pyroxylin, viscose, etc.) for which there is no provision elsewhere.

(2) Note. The expression "organic compound" in this and indented subclasses corresponds to the Class 260 class definition; i.e., compounds containing carbon, which are further characterized by the presence in a molecule thereof of (a) two carbon atoms bonded together, (b) one atom of carbon bonded to at least one atom of hydrogen or halogen, or (c) one atom of carbon bonded to at least one atom of nitrogen by a single or double bond, with the proviso that HCN, CN-CN, HNCO, HNCS, cyanamide, cyanogen halides, fulminic acid, metal carbides, and graphite are excluded from being organic compounds.

(3) Note. The term "carbohydrate or derivative" in this and indented subclasses corresponds to Class 536 subclass 1.1 definition; i.e., saccharide whose monomeric units are polyhydroxy mono-aldehydes or polyhydroxy mono-ketones, having the formula $C_n(H_2O)_n$ (wherein n is five or six), or the corresponding cyclic hemiacetals thereof; or the reaction derivatives thereof in which the carbon skeleton and the carbonyl function or hemi-acetal function of the saccharide unit are not destroyed.

(4) Note. The term “alloy” in this and indented subclasses corresponds to Class 75 class definition; i.e., a union, possessing metallic properties of two or more metallic elements or of nonmetallic element(s) and metallic elements(s) which are not pure compounds and which are miscible with each other, which at least to a certain extent when molten forms a more or less homogeneous liquid having a metallic matrix and which does not separate into distinct layers when solid. Such combinations when solidified from a melt may consist of mechanical mixtures, entectics, entectoids, solid solutions, or in part of chemical compounds one or more of which may exist at the same time. Intermetallic compounds are considered alloys for purposes of classification.

(5) Note. The term “hetero ring” in this and indented subclasses corresponds to Class 532 class definition; i.e., a ring having only carbon and at least one atom from the group consisting of nitrogen, oxygen, sulfur, selenium and tellurium as ring members.

SEE OR SEARCH THIS CLASS, SUBCLASS:

15.05+, for compositions within this class containing fireproofing or biocidal agent.

31.36+, for compositions within this class which are specialized for use as marking, writing, printing, and particularly subclass 31.37 for ink compositions containing cellulose or derivative thereof.

166.01, 168.01, 169.01, and 172.1, for compositions containing cellulose xanthate, cellulose ester, cellulose nitrate, or cellulose ether.

638+, for compositions within this class containing inorganic settable ingredients.

SEE OR SEARCH CLASS:

138, Pipes and Tubular Conduits, subclass 118.1 for inedible sausage casings, per se, including shirred casings, with more than nominal wall structure.

162, Paper Making and Fiber Liberation, subclasses 1+ for processes of liberating cellulosic fibers from natural sources including chemical treatment, and subclasses 100+ for cellulosic fiber containing compositions which are deposited from liquid suspensions.

252, Compositions, subclasses 582+ for compositions containing ultraviolet filtering material or other light transmission modifying materials.

426, Food or Edible Material: Processes, Compositions, and Products, subclass 105, 135, and 138+ for edible food casings or casings containing a food product.

428, Stock Material or Miscellaneous Articles subclass 34.8 for a flexible casing with nominal wall structure for food products such as sausage, appropriate subclasses for a stock material product in the form of a single or plural layer web or sheet and particularly subclasses 227+ for such a product comprising intertangled strands or strand-portions, and subclasses 375+ for structurally defined or coated fiber or filament, or a mass thereof.

536, Organic Compounds, subclasses 56+ for cellulose or derivatives thereof, per se.

164.01 Lignocellulosic material (e.g., wood, bark, straw, bagasse, wood pulp, etc.):

This subclass is indented under subclass 163.01. Compositions wherein the cellulosic material is raw vegetable matter consisting primarily of cellulose, primarily of lignin and cellulose, or primarily of lignin and cellulose and minor amounts of carbohydrate and resin.

(1) Note. Lignin is a noncarbohydrate, polymeric substance found in wood and woody plants which functions as a natural plastic binder for the cellulose fibers. It is isolated directly from wood or wood products or from the treatment of wood, e.g., waste sulfite liquor or black liquor. The structure of the lignin monomer is not completely known.

(2) Note. Lignocellulosic materials include but are not limited to: straw, bagasse, corn stalk, grass, wood pulp, wood, bark.

SEE OR SEARCH THIS CLASS, SUBCLASS:

164.1, for cork or 164.2 for peat.

165.01, for compositions containing chemically modified lignocellulosic material of indeterminate structure (e.g., hydrolyzed, etherified, etc.).

164.1 Cork:

This subclass is indented under subclass 164.01. Compositions wherein the lignocellulosic material is (A) the exterior layer of the bark of the Cork Oak Tree or (B) cork, per se.

SEE OR SEARCH THIS CLASS, SUBCLASS:

38, for shoe filling composition with cork.

164.11 With fat, fatty oil, higher fatty acid, or derivative:

This subclass is indented under subclass 164.1. Compositions which contain in addition to the cork fat, fatty oil, higher fatty acid, and functional derivative thereof.

(1) Note. Definitions are found in the Glossary below.

(2) Note. Examples of derivative included herein are esterified, oxidized, polymerized, vulcanized, hydrogenized fat, or fatty oil and the functional derivative of higher fatty acid such as esters, acid salts, and amides.

(3) Note. Included herein are oils derived from plant and animal origin (e.g., castor, coconut, corn, soybean, olive, cottonseed, safflower, fish, fish-liver, sperm, etc.) and the functional oils, such as drying oils (linseed, tung, oiticica), semidrying oils (soybean, cottonseed), and nondrying oils (castor, coconut).

SEE OR SEARCH THIS CLASS, SUBCLASS:

164.4, compositions containing lignocellulosic material and organic compound containing chalcogen.

164.43, for compositions containing fat, fatty oil, higher fatty acid, or derivative in combination with lignocellulosic material and natural resin or derivative.

164.44, for compositions containing fat, fatty oil, higher fatty acid, or derivative in combination with lignocellulosic material.

GLOSSARY

FAT, FATTY OIL

The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

HIGHER FATTY ACID

Aliphatic monocarboxylic acid containing an unbroken chain of at least seven carbon atoms bonded to a carboxyl group (e.g., lauric, palmitic, stearic, oleic, ricinoleic, linoleic, behenolic, etc.). Where there are several unbroken chains of carbon atoms bonded to the -C(=O)O- group, one of the chains must contain at least seven carbon atoms.

164.12 With bituminous or tarry residue:

This subclass is indented under subclass 164.1. Compositions which contain in addition to the cork a composition or compound having the characteristics of a tar or pitch no matter what the origin.

(1) Note. Examples of components included herein are all asphalts, bitumens, pitches and tars from coal, mineral oil, cotton seed pitch and the residue from the destructive distillation of wood, and natural oil distillations.

SEE OR SEARCH THIS CLASS, SUBCLASS:

164.6, for compositions containing lignocellulosic material and bituminous or tarry residue.

164.2 Peat:
This subclass is indented under subclass 164.01. Compositions wherein the lignocellulosic material is partially decayed plant matter formed in water-saturated environments, such as bogs and marshes.

164.3 With organic compound containing nitrogen:
This subclass is indented under subclass 164.01. Compositions which contain in addition to the lignocellulosic material an organic compound which has at least one nitrogen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166.4+, 169.46+, 170.42+, 190.1, and 200.1+, for compositions containing cellulose xanthate, cellulose nitrate, cellulose ester or salt thereof, cellulose ether or salt thereof, or a cellulosic material and an organic compound containing nitrogen.

164.4 With organic compound containing chalcogen:
This subclass is indented under subclass 164.01. Compositions which contain in addition to the lignocellulosic material an organic compound which has at least one chalcogen atom (i.e., oxygen, sulfur, selenium or tellurium) therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
163.01, (2) Note for the definition of an organic compound.

164.41 Natural resin or derivative:
This subclass is indented under subclass 164.4. Compositions wherein the organic compound containing chalcogen is a natural resin or derivative of a natural resin.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, or sulfurized resin, or salt thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:
169.18+,170.21, and 178.1, for compositions containing natural resin or derivative and cellulose nitrate, cellulose ester or salt thereof, or cellulose ether or salt thereof.

164.42 With hydrocarbon (e.g., petroleum fraction, paraffin, olefin, acetylene, etc.):
This subclass is indented under subclass 164.41. Compositions which contain in addition to the lignocellulosic material and natural resin an organic compound consisting exclusively of the elements carbon and hydrogen.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166.7, for compositions containing cellulose xanthate and hydrocarbon.

164.43 With fat, fatty oil, higher fatty acid, or derivative:
This subclass is indented under subclass 164.41. Compositions which contain in addition to the lignocellulosic material and natural resin fat, fatty oil, higher fatty acid or derivative thereof.

(1) Note. Definitions can be found in the Glossary below.

(2) Note. Examples of derivative included herein are esterified, oxidized, polymerized, vulcanized, hydrogenized fat, or fatty oil and the functional derivative of higher fatty acid such as esters, acid salts, and amides.

(3) Note. Included herein are oils derived from plant and animal origin (e.g., cas-

tor, coconut, corn, soybean, olive, cottonseed, safflower, fish, fish-liver, sperm, etc.) and the functional oils, such as drying oils (linseed, tung, oiticica), semidrying oils (soybean, cottonseed), and nondrying oils (castor, coconut).

SEE OR SEARCH THIS CLASS, SUBCLASS:

164.11, for compositions containing cork and fat, fatty oil, higher fatty acid or derivative.

164.44, , for compositions containing lignocellulosic material and fat, fatty oil, higher fatty acid or derivative.

GLOSSARY

FAT, FATTY OIL

The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

HIGHER FATTY ACID

Aliphatic monocarboxylic acid containing an unbroken chain of at least seven carbon atoms bonded to a carboxyl group (e.g., lauric, palmitic, stearic, oleic, ricinoleic, linoleic, behenolic, etc.). Where there are several unbroken chains of carbon atoms bonded to the -C(=O)O- group, one of the chains must contain at least seven carbon atoms.

164.44 Fat, fatty oil, higher fatty acid or derivative:
This subclass is indented under subclass 164.4. Compositions wherein the organic compound containing chalcogen is fat, fatty oil, higher fatty acid or derivative thereof.

(1) Note. Definitions are in the Glossary below

(2) Note. Examples of derivative included herein are esterified, oxidized, polymerized, vulcanized, hydrogenized fat, or fatty oil and the functional derivative of higher fatty acid such as esters, acid salts, and amides.

(3) Note. Included herein are oils derived from plant and animal origin (e.g., castor, coconut, corn, soybean, olive, cottonseed, safflower, fish, fish-liver, sperm, etc.) and the functional oils, such as drying oils (linseed, tung, oiticica), semidrying oils (soybean, cottonseed), and nondrying oils (castor, coconut).

SEE OR SEARCH THIS CLASS, SUBCLASS:

164.11, for compositions containing cork and fat, fatty oil, higher fatty acid or derivative.

164.43, for compositions containing fat, fatty oil, higher fatty acid or derivative in combination with lignocellulosic material and natural resin or derivative.

GLOSSARY

FAT, FATTY OIL

The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

HIGHER FATTY ACID

Aliphatic monocarboxylic acid containing an unbroken chain of at least seven carbon atoms bonded to a carboxyl group (e.g., lauric, palmitic, stearic, oleic, ricinoleic, linoleic, behenolic, etc.). Where there are several unbroken chains of carbon atoms bonded to the -C(=O)O- group, one of the chains must contain at least seven carbon atoms.

164.5 With element or inorganic compound except water:
This subclass is indented under subclass 164.01. Compositions which contain in addition to the lignocellulosic material elemental material or any inorganic compound except water.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

(2) Note. Examples of components included herein are carbon black, metal alloy, metal dust, sodium chloride, and calcium carbonate.

SEE OR SEARCH THIS CLASS, SUBCLASS:

166.8+, and 204.01+, for compositions containing cellulose xanthate or cellulose and inorganic compound or element, other than water.

164.51 Elemental silicon or inorganic silicon compound:

This subclass is indented under subclass 164.5. Compositions in which the inorganic compound or element is an inorganic compound containing silicon or elemental silicon.

SEE OR SEARCH THIS CLASS, SUBCLASS:

166.82, 169.55, 170.57, and 203.3, for compositions containing cellulose xanthate, cellulose nitrate, cellulose ester or salt, cellulose ether or salt, or a cellulosic material and an inorganic compound containing silicon or an elemental silicon.

164.52 Asbestos:

This subclass is indented under subclass 164.51. Compositions in which the compound containing silicon is fibrous calcium magnesium silicate.

164.53 Elemental sulfur or inorganic sulfur compound:

This subclass is indented under subclass 164.5. Compositions in which the inorganic compound or element is an inorganic compound containing sulfur or elemental sulfur.

164.6 With bituminous or tarry residue:

This subclass is indented under subclass 164.01. Compositions which contain a composition or compound having the characteristics of a tar or pitch no matter what the origin.

(1) Note. Examples of components included herein are all asphalts, bitumens, pitches and tars from coal, mineral oil, cotton seed pitch and the residue from the destructive distillation of wood, and natural oil distillations.

SEE OR SEARCH THIS CLASS, SUBCLASS:

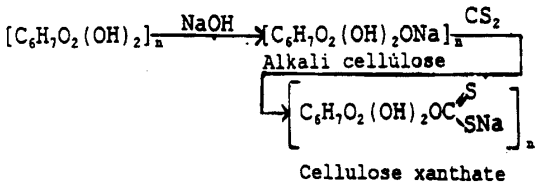
164.12, for compositions containing cork and bituminous or tarry residue.

165.01 Chemically modified lignocellulosic material of indeterminate structure (e.g., hydrolyzed, etherified, etc.):

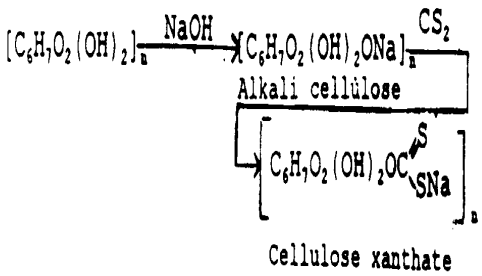
This subclass is indented under subclass 163.01. Compositions wherein the cellulosic material is found in a hydrolyzed, etherified, or other reaction products of lignocellulosic material of indeterminate structure.

166.01 Cellulose xanthate or viscose:

This subclass is indented under subclass 163.01. Compositions wherein the cellulosic material contains the group:



(1) Note. The viscose process is based on the reaction of carbon disulfide with the sodium salt of cellulose to yield a xanthate, which forms a viscous colloidal solution in dilute aqueous alkali.



SEE OR SEARCH CLASS:

264, Plastic and Nonmetallic Article Shaping or Treating: Processes, subclasses 188+ for processes of forming indefinite or continuous length articles from viscose spinning solutions by extru-

sion thereof into a specified precipitating medium as defined, see Class 264 definitions, Lines With Other Classes, "Lines With The Chemical Composition Classes," (5). Where an additive is included in a molding composition or a treating bath for purposes of preventing fouling of equipment see Class 264, subclass 170.

536, Organic Compounds, subclasses 60+ for viscose, per se, and its subsequent treatment.

166.1 With organic compound containing silicon:
This subclass is indented under subclass 166.01. Compositions which contain an organic compound which has at least one silicon atom therein in addition to the cellulose xanthate.

SEE OR SEARCH THIS CLASS, SUBCLASS:

163.01, (2) Note for the definition of an organic compound.

169.17, 170.2, and 177.1, for compositions containing cellulose nitrate, cellulose ester or salt, or cellulose ether or salt and organic compound containing silicon.

166.2 With phosphorus compound:
This subclass is indented under subclass 166.01. Compositions which contain a compound of phosphorus in addition to the cellulose xanthate.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.14+,170.15+, and 175.1, for compositions containing cellulose nitrate, cellulose ester or salt, or cellulose ether or salt and phosphorus compound.

166.3 With organic compound containing sulfur:
This subclass is indented under subclass 166.01. Compositions which contain an organic compound which has at least one sulfur atom therein in addition to the cellulose xanthate.

SEE OR SEARCH THIS CLASS, SUBCLASS:

163.01, (2) Note for the definition of an organic compound.

169.45, 170.46, 191.1, and 202.1, for compositions containing cellulose nitrate, cellulose ester or salt, cellulose ether or salt, or a cellulosic material and organic compound containing sulfur.

166.31 Carbon double bonded directly to the sulfur:
This subclass is indented under subclass 166.3. Compositions wherein the sulfur is double bonded directly to a carbon.

166.4 With organic compound containing nitrogen:
This subclass is indented under subclass 166.01. Compositions which contain in addition to the cellulose xanthate an organic compound which has at least one nitrogen atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:

163.01, (2) Note for the definition of an organic compound.

164.3, 169.46+, 170.42+, 190.1, and 200.1+, for compositions containing lignocellulosic material, cellulose nitrate, cellulose ester or salt, cellulose ether or salt, or a cellulosic material and an organic compound containing nitrogen.

166.41 The nitrogen is a member of a hetero ring:
This subclass is indented under subclass 166.4. Compositions wherein the nitrogen of the organic compound containing nitrogen is part of a hetero ring.

SEE OR SEARCH THIS CLASS, SUBCLASS:

163.01, (5) Note for the definition of hetero ring.

169.1+, 170.1+, 173.01, and 200.2, for compositions containing cellulose nitrate, cellulose ester or salt, cellulose ether or salt, or a cellulosic material and nitrogen containing hetero ring.

166.42 Oxygen and nitrogen in the same compound (e.g., ammonium alkyl sulfonate, tertiary amine oxide, triethanolamine, etc.):
This subclass is indented under subclass 166.4. Compositions wherein the organic compound has both oxygen and nitrogen.

SEE OR SEARCH THIS CLASS, SUBCLASS:
200.3, for compositions containing a cellulosic material and organic compound containing both oxygen and nitrogen.

166.43 The oxygen is part of a -C(=O)- group (e.g., amide, urea, etc.):
This subclass is indented under subclass 166.42. Compositions wherein the oxygen is double bonded to a carbon atom.

166.5 With organic compound containing oxygen:
This subclass is indented under subclass 166.01. Compositions which contain in addition to the cellulose xanthate an organic compound which has at least one oxygen atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
163.01, (2) Note for the definition of an organic compound.
203.1, for compositions containing a cellulosic material and organic compound containing oxygen.

166.51 Natural resin or organic -C(=O)O- compound (e.g., rosin, tall oil, tallow, castor oil, carboxylic acid, etc.):
This subclass is indented under subclass 166.5. Compositions wherein the organic compound containing oxygen is (a) a natural resin**,** or (b) a compound in which the carbon of the -C(=O)O- group is, or is attached directly or indirectly by nonionic bonding to, the carbon of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
203.3, for compositions containing a cellulosic material and natural resin or organic -C(=O)O- compound.

166.52 Dihydric or polyhydric alcohol or ether derivative thereof:
This subclass is indented under subclass 166.5. Compositions wherein the organic compound containing oxygen has two or more -OH groups, each of which is bonded directly to a carbon, which carbon may be single bonded to any element but may be multiple bonded only to carbon or ether derivative thereof whereby the H of the -OH group is replaced by a C.

SEE OR SEARCH THIS CLASS, SUBCLASS:
203.2, for compositions containing a cellulosic material and a dihydric or polyhydric alcohol.

166.6 With organic compound containing halogen:
This subclass is indented under subclass 166.01. Compositions which contain in addition to the cellulose xanthate an organic compound which as at least one halogen atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
163.01, (2) Note for the definition of an organic compound.
170.55, 195.1, and 201.1, for compositions containing cellulose ester or salt, cellulose ether or salt, or a cellulosic material and an organic compound containing halogen.

166.7 With bituminous or tarry residue or hydrocarbon (e.g., petroleum fraction, paraffin, olefin, acetylene, etc.):
This subclass is indented under subclass 166.01. Compositions which contain in addition to the cellulose xanthate a composition or compound having the characteristics of a tar or pitch no matter what the origin or an organic compound consisting exclusively of the elements carbon and hydrogen.

(1) Note. Examples of components included herein are all asphalts, bitumens, pitches and tars from coal, mineral oil, cotton seed pitch and the residue from the destructive distillation of wood, and natural oil distillations.

SEE OR SEARCH THIS CLASS, SUBCLASS:

164.42, for compositions containing a hydrocarbon in addition to a lignocellulosic material, an organic compound containing chalcogen, and a natural resin or derivative.

166.8 With element or inorganic compound except water:

This subclass is indented under subclass 166.01. Compositions which contain in addition to the cellulose xanthate elemental material or any inorganic compound except water.

(1) Note. Examples of components included herein are carbon disulfide, carbon black, metal alloy, metal dust, sodium chloride, and calcium carbonate.

SEE OR SEARCH THIS CLASS, SUBCLASS:

163.01, (2) Note for the definition of an organic compound.

164.5+, and 203.1+, for compositions containing a lignocellulosic material or a cellulosic material and inorganic compound or element, other than water.

166.81 Elemental titanium or inorganic titanium compound:

This subclass is indented under subclass 166.8. Compositions wherein the inorganic compound or element is elemental titanium or an inorganic compound containing titanium.

SEE OR SEARCH THIS CLASS, SUBCLASS:

204.2, for compositions containing a cellulosic material and inorganic compound containing titanium.

166.82 Elemental silicon or inorganic silicon compound:

This subclass is indented under subclass 166.8. Compositions wherein the inorganic compound or element is elemental silicon or an inorganic compound containing silicon.

SEE OR SEARCH THIS CLASS, SUBCLASS:

164.51+,169.55, 170.57, 197.01, and 203.3, for compositions containing a lignocellulosic material, cellulose nitrate, cellulose ester or salt, cellulose ether or salt, or a cellulosic material and elemental silicon or inorganic compound containing silicon.

167.01 Cuprammonium cellulose:

This subclass is indented under subclass 163.01. Compositions wherein the cellulosic material is cellulose in cupra-ammonium solution.

168.01 Cellulose ester or salt thereof:

This subclass is indented under subclass 163.01. Compositions wherein the cellulosic material is the product of the reaction of a hydroxyl group of cellulose with an acid.

(1) Note. The esterifying acid may be organic or inorganic.

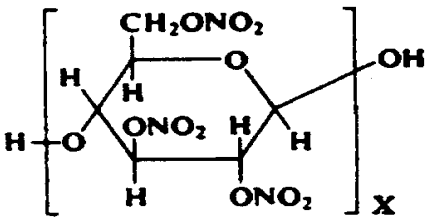
(2) Note. For purposes of classifying patents in this and indented subclasses, each of the following group is considered to be a single cellulose ester and not diverse cellulose esters: (a) cellulose ester of a single acid (e.g., cellulose acetate, cellulose propionate, etc.); (b) cellulose ester of mixed acids (e.g., cellulose butyrate propionate, cellulose propionate isobutyrate, etc.), or (c) mixture of cellulose esters of the same acid differ only in the degree of esterification (e.g., mixture of cellulose propionate and cellulose tripropionate, etc.)

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.01+,for compositions containing cellulose nitrate as the cellulose ester.

169.01 Cellulose nitrate:

This subclass is indented under subclass 168.01. Compositions wherein the cellulose ester is a product produced by reacting nitric acid with cellulose one of the principal component of which has the following structure:



(1) Note. Examples of cellulose nitrate included herein are pyroxylin, nitrocellulose, and gun cotton.

169.1 With nitrogen hetero ring compound (e.g., succinimide, caprolactam, piperazine, etc.):
This subclass is indented under subclass 169.01. Compositions which contain an organic compound having a heterocyclic ring containing nitrogen as a hetero atom in addition to the cellulose nitrate.

SEE OR SEARCH THIS CLASS, SUBCLASS:
163.01, (5) Note for the definition of hetero ring.
166.41, 170.1+, 173.01, and 200.2, for compositions containing cellulose xanthate, cellulose ester or salt, cellulose ether or salt, or a cellulosic material and nitrogen containing hetero ring.

169.11 The hetero ring is part of a polycyclo ring system (e.g., guanine, phthalimide, etc.):
This subclass is indented under subclass 169.1. Compositions wherein the nitrogen containing hetero ring compound has a ring system with at least two rings which (a) share with each other two adjacent ring atoms, or (b) share with each other three or more ring atoms.

169.12 With chalcogen hetero ring compound (e.g., lactone, maleic anhydride, furan, etc.):
This subclass is indented under subclass 169.01. Compositions which contain an organic compound having a hetero ring containing chalcogen (i.e., oxygen, sulfur, selenium, and tellurium) as a hetero atom in addition to the cellulose nitrate.

SEE OR SEARCH THIS CLASS, SUBCLASS:
163.01, (5) Note for the definition of hetero ring.
170.12+,174.1+, for compositions containing cellulose ester or salt or cellulose ether or salt and chalcogen containing hetero ring.

169.13 Plural oxygens in the hetero ring (e.g., dioxane, dioxene, etc.):
This subclass is indented under subclass 169.12. Compositions wherein the hetero ring has two or more oxygens as ring members.

169.14 With phosphorus compound:
This subclass is indented under subclass 169.01. Compositions which contain a compound of phosphorus in addition to the cellulose nitrate.

(1) Note. Phosphorus compounds are often used as plasticizers and fire retardants.

SEE OR SEARCH THIS CLASS, SUBCLASS:
18.14+, for compositions within this class containing phosphorus fireproofing or biocidal agent
166.2, 170.15+, and 175.1, for compositions containing cellulose xanthate, cellulose ester or salt, or cellulose ether or salt and phosphorus compound.

169.15 Trialkyl or triaryl phosphate or mixed esters thereof (e.g., tributyl phosphate, triphenyl phosphate, dicresyl lauryl ortho phosphate, etc.):
This subclass is indented under subclass 169.14. Compositions wherein the formula for the phosphorus compound is $PO(OR)(OR_1)(OR_2)$, where R, R_1, and R_2 = alkyl radical or aryl radical and where R, R_1, and R_2 can be the same or diverse radicals.

169.16 With boron compound:
This subclass is indented under subclass 169.01. Compositions which contain a compound of boron in addition to the cellulose nitrate.

SEE OR SEARCH THIS CLASS, SUBCLASS:

170.19, and 176.1, for compositions containing cellulose ester or salt or cellulose ether or salt and boron compound.

169.17 With organic compound containing silicon:

This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate an organic compound which has at least one silicon atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:

163.01, (2) Note for the definition of an organic compound.

166.1, 170.2, and 177.1, for compositions containing cellulose xanthate, cellulose ester or salt, or cellulose ether or salt and organic compound containing silicon.

169.18 With natural resin or derivative:

This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate a natural resin or reaction product of a natural resin.

(1) Note. Natural resins include but are not limited to: Shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

SEE OR SEARCH THIS CLASS, SUBCLASS:

164.41+,170.21, and 178.1, for compositions containing natural resin or derivative and lignocellulosic material, cellulose ester or salt thereof or cellulose ether or salt thereof.

169.19, for compositions containing cellulose nitrate and chemically modified natural resin of indeterminate structure.

169.19 Chemically modified natural resin of indeterminate structure (e.g., oxidized, polymerized, hydrogenized, esterified, etc.):

This subclass is indented under subclass 169.18. Compositions wherein the resin undergoes oxidation, polymerization, hydrogenation, esterification or other chemical reaction products of a resin of indeterminate structure.

169.2 With additional diverse natural resin or derivative:

This subclass is indented under subclass 169.18. Compositions which contain two different natural resins or derivative thereof in addition to the cellulose nitrate.

169.21 With naturally occurring wax (e.g., mineral, ceresin, etc.):

This subclass is indented under subclass 169.18. Compositions which contain a naturally occurring low-melting organic mixture or compound of hydrocarbons or esters of fatty acids and alcohols having the characteristics of wax (solid at room temperature) in addition to the cellulose nitrate and the resin.

169.22 With fatty oil or derivative (e.g., coconut, cottonseed, soybean, fish, sperm oil, etc.):

This subclass is indented under subclass 169.18. Compositions which contain in addition to the resin and cellulose nitrate fatty oil or derivative.

(1) Note. By “fatty oil” are meant the glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil derived from animals or plant seeds or nuts;

(2) Note. Examples of derivative included herein are esterified, oxidized, polymerized, vulcanized, hydrogenized fatty oil.

(3) Note. Included herein are oils derived from plant and animal origin (e.g., castor, coconut, corn, soybean, olive, cottonseed, safflower, fish, fish-liver, sperm, etc.) and the functional oils, such as drying oils (linseed, tung, oiticica), semidrying oils (soybean, cottonseed), and nondrying oils (castor, coconut).

(4) Note. Pine oil is not a vegetable fatty oil because its chief constituents are tertiary and secondary terpene alcohols.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.23, for compositions containing fatty acids, salts, or esters other than the triglyceride of the higher fatty acids in addition to cellulose nitrate and natural resin or derivative.

169.23 With carboxylic acid, ester, or salt thereof:
This subclass is indented under subclass 169.18. Compositions which contain in addition to the resin and cellulose nitrate an organic compound having a carboxylate group (i.e., -C(=O)O-) as part of a carboxylic acid, ester, or salt.

169.24 With organic compound containing oxygen:
This subclass is indented under subclass 169.18. Compositions which contain in addition to the resin and cellulose nitrate a compound which has at least one oxygen atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:

163.01, (2) Note for the definition of an organic compound.

169.25 With chemically modified lanolin, fat, or fatty oil (e.g., blown, polymerized, hydrogenized, esterified, etc.)
This subclass is indented under subclass 169.01. Compositions which contain blown, polymerized, hydrogenized, esterified or reaction products which still maintain the basic ester structures of a fat, lanolin, or fatty oil.

(1) Note. Definitions can be found in the Glossary below.

(2) Note. Included herein are reaction products of oils derived from plant and animal origin (e.g., castor, coconut, corn, soybean, olive, cottonseed, safflower, fish, fish-liver, sperm, etc.), and of the functional oils, such as drying oils (linseed, tung, oiticica), semidrying oils (soybean, cottonseed), and nondrying oils (castor, coconut).

(3) Note. Hydrolysis is excluded from this subclass as a chemical modification of lanolin, fat, or fatty oil since this chemical reaction produces cholesterol or glycerol and salts of higher fatty acids.

GLOSSARY

FAT, FATTY OIL

The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

LANOLIN

Cholesterol esters of higher fatty acids;

169.26 With lanolin, fat, or fatty oil (e.g., lard, tallow, castor oil, linseed oil, etc.):
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate a fat, lanolin, or fatty oil.

(1) Note. Definitions can be found in the Glossary below.

(2) Note. Included herein are oils derived from plant and animal origin (e.g., castor, coconut, corn, soybean, olive, cottonseed, safflower, fish, fish-liver, sperm, etc.) and the functional oils, such as drying oils (linseed, tung, oiticica), semidrying oils (soybean, cottonseed), and nondrying oils (castor, coconut).

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.25, for compositions containing cellulose nitrate and chemically modified lanolin, fat, or fatty oil.

170.23, and 179.1, for compositions containing cellulose ester or salt thereof or cellulose ether or salt thereof and lanolin, fat, or fatty oil or derivative thereof.

GLOSSARY

FAT, FATTY OIL

The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

LANOLIN

Cholesterol esters of higher fatty acids;

169.27 With organic compound containing oxygen:
This subclass is indented under subclass 169.26. Compositions which contain in addition to cellulose nitrate and lanolin, animal fat, or animal or vegetable oil an organic compound which has at least one oxygen atom therein.

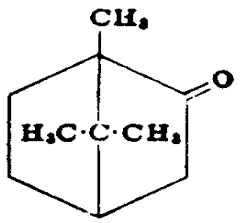
(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

169.28 With terpene or derivative (e.g., pine oil, terpineol, borneol, etc.):
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate a terpene or reaction products wherein the terpene structure is not destroyed.

(1) Note. Terpene denotes a hydrocarbon having two or more isoprene units (C_5H_8). Most terpenes have carbon skeleton of 10, 15, 20, or 30 atoms.

SEE OR SEARCH THIS CLASS, SUBCLASS:
170.25, and 180.1, for compositions containing cellulose ester or salt thereof or cellulose ether or salt thereof and terpene or derivative thereof.

169.29 Camphor:
This subclass is indented under subclass 169.28. Compositions wherein the terpene derivative is a compound of the following structure:



169.3 With carboxylic acid, ester, or salt thereof:
This subclass is indented under subclass 169.29. Compositions which contain in addition to the cellulose nitrate and camphor an organic compound having a carboxylate group (i.e., -C(=O)O-) as part of a carboxylic acid, ester, or salt.

169.31 With organic compound containing nitrogen, halogen, or chalcogen:
This subclass is indented under subclass 169.29. Compositions which contain in addition to the cellulose nitrate and camphor an organic compound which has at least one nitrogen, halogen, or chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

169.32 With compound of indeterminate structure prepared by reacting an organic -C(=O)O- compound:
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate a compound of unknown structure, resulting from the reaction of an organic compound containing the -C(=O)O- group.

169.33 With organic -C(=O)O- group containing compound except wax (e.g., fatty acid, dicarboxylic acid, etc.):
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate an organic compound containing the -C(=O)O- group except wax.

(1) Note. Examples of compounds included herein are the carboxylic acids such as dicarboxylic acid, and fatty acid.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.54, for compositions containing cellulose nitrate and naturally occurring wax.

170.26+, and 181.1+, for compositions containing cellulose ester or salt thereof or cellulose ether or salt thereof and organic -C(=O)O- group containing compound.

169.34 Carbon bonded directly to the single bonded oxygen of the -C(=O)O- group (e.g., fatty acid ester, acid anhydride, etc.):
This subclass is indented under subclass 169.33. Compositions wherein the single bonded oxygen of the organic-C(=O)O- group is single bonded to an additional carbon atom.

169.35 Plural -C(=O)O- groups attached directly or indirectly to each other by nonionic bonding:
This subclass is indented under subclass 169.34. Compositions wherein the -C(=O)O- group is attached directly or indirectly to one or more -C(=O)O- groups by nonionic bonding.

169.36 Carbocyclic ring attached directly or indirectly to the -C(=O)O- groups:
This subclass is indented under subclass 169.35. Compositions wherein the -C(=O)O- groups are attached directly or indirectly to a benzene or an alicyclic (cycloaliphatic) ring.

(1) Note. Alicyclic (cycloaliphatic) denotes (1) Cycloparaffins (saturated), (2) cycloolefins (unsaturated with one or more double bonds), and (3) cycloacetylenes or cyclynes (unsaturated with triple bond).

169.37 Exactly two -C(=O)O- groups attached directly to the carbocyclic ring by nonionic bonding:
This subclass is indented under subclass 169.36. Compositions wherein the carbocyclic ring is attached directly to two -C(=O)O- groups by nonionic bonding.

169.38 Oxygen, other than in -C(=O)O- group, attached indirectly to the -C(=O)O- groups by nonionic bonding:
This subclass is indented under subclass 169.37. Compositions wherein a non carboxylate oxygen is attached indirectly to the -C(=O)O- groups by nonionic bonding.

169.39 Esterified dihydric or polyhydric alcohol:
This subclass is indented under subclass 169.35. Compositions wherein the plural carboxylic acid ester groups are produced by reacting a carboxylic acid with an alcohol having two or more -OH groups.

169.4 Nitrogen or oxygen bonded directly to the carbon of the -C(=O)O- group (e.g., diethyl carbonate, dodecyl phenylcarbamate, octyl carbanilate, urethane, etc.):
This subclass is indented under subclass 169.34. Compositions wherein the carbon of the -C(=O)O- group is bonded directly to nitrogen or to oxygen.

169.41 Oxygen attached indirectly to the -C(=O)O- group by nonionic bonding:
This subclass is indented under subclass 169.34. Compositions wherein a non oxygen is attached indirectly to the-C(=O)O- group by nonionic bonding.

169.42 Benzene ring attached directly or indirectly to the -C(=O)O- group by nonionic bonding:
This subclass is indented under subclass 169.34. Compositions wherein the -C(=O)O- group is attached directly or indirectly to a benzene ring.

169.43 With organic compound containing oxygen (e.g., alcohol, ketone, additional carboxylic acid ester, etc.):
This subclass is indented under subclass 169.34. Compositions which contain an organic compound which has at least one oxygen atom therein in addition to the cellulose nitrate and the compound having carbon bonded directly to the single bonded oxygen of the -C(=O)O- group.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

169.44 Metal or Nitrogen salt:
This subclass is indented under subclass 169.33. Compositions wherein the hydrogen of the carboxylic acid is replaced by a metal or ammonium or substituted ammonium.

169.45 With organic compound containing sulfur:
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate an organic compound which has at least one sulfur atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166.3+, 202.1, 170.46, and 191.1, for compositions containing cellulose xanthate, a cellulosic material, cellulose ester or salt, or cellulose ether or salt and organic compound containing sulfur.

169.46 With organic compound containing nitrogen:
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate an organic compound which has at least one nitrogen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
164.3, 166.4+, 170.42+, 190.1, and 200.1+, for compositions containing lignocellulosic material, cellulose xanthate, cellulose ester, cellulose ether or salt thereof, or a cellulosic material and organic compound containing nitrogen.

169.47 The nitrogen is single bonded directly to the carbon of a -C(=O)- group:
This subclass is indented under subclass 169.46. Compositions wherein the organic compound containing nitrogen has the carbon of a -C(=O)- group bonded directly to the nitrogen by a single bond

169.48 With organic -C(=O)- group containing compound (e.g., aldehyde, ketone, etc.):
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate an organic compound having a -C(=O)- group.

SEE OR SEARCH THIS CLASS, SUBCLASS:
170.47+, and 192.1, for compositions containing cellulose ester or salt thereof or cellulose ether or salt thereof and organic -C(=O)- group containing compound.

169.49 With ether except dialkylene or polyalkylene glycol:
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate an organic compound having -C-O-C- group except dialkylene or polyalkylene glycol.

SEE OR SEARCH THIS CLASS, SUBCLASS:
169.51+, for compositions containing cellulose ester or salt thereof and dialkylene or polyalkylene glycol.
170.5, and 193.1, for compositions containing cellulose ester or salt thereof or cellulose ether or salt thereof and an organic -C-O-C- group containing compound.

169.5 With organic -C(-OH)- group containing compound, where the H of the -OH group can be replaced by a metal (e.g., alkanol, phenol, polyol, phenolate, etc.):
This subclass is indented under subclass 169.49. Compositions which contain in addition to the cellulose nitrate and the ether an organic compound having a carbon bonded directly to a hydroxyl -OH group, where metal can replace the H of the -OH group.

169.51 With organic -C(-OH)- group containing compound, where the H of the -OH group can be replaced by a metal (e.g., alkanol,

phenol, polyol, alkanolate, dialkylene glycol, etc.):
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate an organic compound having a carbon bonded directly to a -OH group, where metal can replace the H of the -OH group.

SEE OR SEARCH THIS CLASS, SUBCLASS:
170.51+, and 194.1+, for compositions containing cellulose ester or salt thereof or cellulose ether or salt thereof and organic -C(-OH)- group containing compound.

169.52 Halogen containing or with organic compound containing halogen:
This subclass is indented under subclass 169.51. Compositions which contain in addition to the cellulose nitrate (a) an organic -C(-OH)- group containing compound which has at least one halogen atom therein (where a metal can replace the H of the -OH group) or (b) an organic compound which has at least one halogen atom therein and an organic -C(-OH)- group containing compound, where a metal can replace the H of the -OH group.

169.53 With organic compound containing halogen:
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose ester or salt thereof and the organic -C(-OH)- group containing compound an organic compound which has at least one halogen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

169.54 With bituminous or tarry residue, hydrocarbon, or naturally occurring wax:
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate (a) a composition or compound having the characteristics of a tar or pitch no matter what the origin, (b) an organic compound consisting exclusively of the elements carbon and hydrogen, or (c) a naturally-occurring low-melting organic mixture or compound of hydrocarbons or esters of fatty acids and alcohols having the characteristics of wax (solid at room temperature)

(1) Note. Examples of components included herein are alkanes, alkenes, olefins, montan wax, ceresin wax, carnauba wax, all asphalts, bitumens, pitches and tars from coal, mineral oil, cotton seed pitch and the residue from the destructive distillation of wood, and natural oil distillations.

SEE OR SEARCH THIS CLASS, SUBCLASS:
170.56, and 196.1, for compositions containing cellulose ester or salt thereof or cellulose ether or salt thereof and hydrocarbon, wax, bituminous or tarry residue.

169.55 With elemental silicon or inorganic silicon compound:
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate an elemental silicon or an inorganic compound containing silicon.

SEE OR SEARCH THIS CLASS, SUBCLASS:
164.51+, 166.82, 170.57, 197.01, and 203.3, for compositions containing lignocellulosic material, cellulose xanthate, cellulose ester or salt, cellulose ether or salt, or a cellulosic material and elemental silicon or inorganic compound containing silicon.

169.56 With elemental metal or alloy or metal compound:
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate free metal, mixture of two or more metals or of one or more metals with certain nonmetallic elements (e.g., carbon steel), or compound of metal.

(1) Note. See this class, subclass 163.01, (4) Note for the definition of an alloy.

SEE OR SEARCH THIS CLASS, SUBCLASS:
170.58, and 198.1, for compositions containing cellulose ester or salt thereof or cellulose ether or salt thereof and ele-

mental metal or alloy or metal compound.

169.57 With elemental carbon (e.g., graphite, coal, etc.):
This subclass is indented under subclass 169.01. Compositions which contain in addition to the cellulose nitrate carbon in substantially pure form including its crystalline allotrope (i.e., graphite) and amorphous allotropes (e.g., coal, coke, carbon black, etc.).

SEE OR SEARCH THIS CLASS, SUBCLASS:
199.1, for compositions containing cellulose ether or salt thereof and elemental carbon.

170.1 With nitrogen hetero ring compound:
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof an organic compound having a hetero ring containing nitrogen as a hetero atom.

(1) Note. See this class, subclass 163.01, (5) Note for the definition of hetero ring.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166.41, 169.1+, 173.01, and 200.2, for compositions containing cellulose xanthate, cellulose nitrate, cellulose ether or salt, or a cellulosic material and nitrogen containing hetero ring.

170.11 Chalcogen hetero atom:
This subclass is indented under subclass 170.1. Compositions wherein the hetero ring compound has both nitrogen and chalcogen (i.e., oxygen, sulfur, selenium, and tellurium) as hetero atoms in the same hetero ring or has a hetero ring containing nitrogen attached directly or indirectly to a hetero ring containing chalcogen.

170.12 With chalcogen hetero ring compound:
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof an organic compound having a hetero ring containing chalcogen (i.e., oxygen, sulfur, selenium, and tellurium) as a hetero atom.

(1) Note. See this class, subclass 163.01, (5) Note for the definition of hetero ring.

SEE OR SEARCH THIS CLASS, SUBCLASS:
169.12+, and 174.1+, for compositions containing cellulose nitrate or cellulose ether or salt and chalcogen containing hetero ring.

170.13 Three-membered hetero ring (e.g., epichlorohydrin, epoxide, etc.):
This subclass is indented under subclass 170.12. Compositions wherein the chalcogen containing hetero ring has exactly three members.

170.14 Plural chalcogens in the hetero ring:
This subclass is indented under subclass 170.12. Compositions wherein the hetero ring has two or more chalcogens as ring members.

170.15 With phosphorus compound:
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof a compound of phosphorus.

(1) Note. Phosphorus compounds are often used as plasticizers and fire retardants.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166.2, 169.14+ and 175.1, for compositions containing cellulose xanthate, cellulose nitrate, or cellulose ether or salt and phosphorus compound.

170.16 Trialkyl or triaryl phosphate or mixed esters thereof (e.g., tributyl phosphate, triphenyl phosphate, dicresyl lauryl ortho phosphate, etc.):
This subclass is indented under subclass 170.15. Compositions wherein the formula for the phosphorus compound is $PO(OR)(OR_1)(OR_2)$, where R, R_1, and R_2 = alkyl radical or aryl radical and where R, R_1, and R_2 can be the same or diverse radicals

170.17 With organic compound containing nitrogen:
This subclass is indented under subclass 170.16. Compositions which contain in addition to the trialkyl, triaryl phosphate or mixed esters thereof an organic compound which has at least one nitrogen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

170.18 With carboxylic acid, ester, or salt thereof:
This subclass is indented under subclass 170.16. Compositions which contain in addition to the trialkyl, triaryl phosphate or mixed esters thereof an organic compound containing the -C(=O)O- group.

170.19 With boron compound:
This subclass is indented under subclass 168.01. Compositions which contain a compound of boron in addition to the cellulose ester or salt thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:
169.16, and 176.1, for compositions containing cellulose nitrate or cellulose ether or salt and boron compound.

170.2 With organic compound containing silicon:
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof an organic compound which has at least one silicon atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166.1, 169.17 and 177.1, for compositions containing cellulose xanthate, cellulose nitrate, or cellulose ether or salt and organic compound containing silicon.

170.21 With natural resin or derivative:
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof natural resin or a chemical modification of a natural resin.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, or sulfurized resin, or salt thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:
164.41+,169.18+ and 178.1, for compositions containing natural resin or derivative and lignocellulosic material, cellulose nitrate or cellulose ether or salt thereof.

170.22 With chemically modified lanolin, fat, or fatty oil (e.g. blown, polymerized, hydrogenized, esterified, etc.):
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof a blown, polymerized, hydrogenized, esterified or reaction products which still maintain the basic ester structures of lanolin, fat, or fatty oil.

(1) Note. Definitions can be found in the Glossary below.

(2) Note. Included herein are reaction products of oils derived from plant and animal origin (e.g., castor, coconut, corn, soybean, olive, cottonseed, safflower, fish, fish-liver, sperm, etc.), and of the functional oils, such as drying oils (linseed, tung, oiticica), semidrying oils (soybean, cottonseed), and nondrying oils (castor, coconut).

(3) Note. Hydrolysis is excluded from this subclass as a chemical modification of lanolin, fat, or fatty oil since this chemical reaction produces cholesterol or glycerol and salts of higher fatty acids.

GLOSSARY

FAT, FATTY OIL

The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

LANOLIN

Cholesterol esters of higher fatty acids;

170.23 With lanolin, fat, or fatty oil (e.g., lard, tallow, castor oil, linseed oil, etc.):
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof a fat, lanolin, or fatty oil.

(1) Note. Definitions can be found in the Glossary below.

(2) Note. Included herein are oils derived from plant and animal origin (e.g., castor, coconut, corn, soybean, olive, cottonseed, safflower, fish, fish-liver, sperm, etc.) and the functional oils, such as drying oils (linseed, tung, oiticica), semidrying oils (soybean, cottonseed), and nondrying oils (castor, coconut).

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.26+, and 179.1, for compositions containing cellulose nitrate or cellulose ether or salt thereof and lanolin, fat, or fatty oil or derivative thereof.

GLOSSARY

FAT, FATTY OIL

The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

LANOLIN

Cholesterol esters of higher fatty acids;

170.24 With organic compound containing oxygen:
This subclass is indented under subclass 170.23. Compositions which contain in addition to the cellulose ester or salt thereof an organic compound which has at least one oxygen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

170.25 With terpene or derivative (e.g. camphor, pine oil, terpineol, borneol, etc.):
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof a terpene or reaction products wherein the terpene structure is not destroyed.

(1) Note. Terpene denotes a hydrocarbon having two or more isoprene units (C_5H_8). Most terpenes have carbon skeleton of 10, 15, 20, or 30 atoms.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.28+, and 180.1, for compositions containing cellulose nitrate or cellulose ether or salt thereof and terpene or derivative thereof.

170.26 With organic -C(=O)O- group containing compound except wax (e.g., fatty acid, dicarboxylic acid, etc.):
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof an organic compound containing the -C(=O)O- group except wax.

(1) Note. Examples of compounds included herein are the carboxylic acids such as dicarboxylic acid, and fatty acid.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.33+, and 181.1+, for compositions containing cellulose nitrate or cellulose ether or salt thereof and organic-C(=O)O- group containing compound.

170.27 Carbon bonded directly to the single bonded oxygen of the -C(=O)O- group (e.g., fatty acid ester, acid anhydride, etc.):
This subclass is indented under subclass 170.26. Compositions wherein the organic -C(=O)O- group containing compound has the single bonded oxygen of the -C(=O)O- group single bonded to an additional carbon atom.

170.28 Nitrogen, halogen or chalcogen bonded directly to the carbon of the -C(=O)O- group (e.g., diethyl carbonate, octyl carbanilate, dodecyl phenylcarbamate, urethane, etc.):
This subclass is indented under subclass 170.27. Compositions wherein the carbon of the -C(=O)O- group is bonded directly to a nitrogen or to a chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

170.29 Plural -C(=O)O- groups attached directly or indirectly to each other by nonionic bonding:
This subclass is indented under subclass 170.27. Compositions wherein the -C(=O)O- group is attached directly or indirectly to one or more -C(=O)O- groups by nonionic bonding.

170.3 Benzene ring attached directly or indirectly to the -C(=O)O- groups by nonionic bonding:
This subclass is indented under subclass 170.29. Compositions wherein the -C(=O)O- groups are attached directly or indirectly to a benzene ring.

170.31 Exactly two -C(=O)O- groups attached directly to the same benzene ring by nonionic bonding:
This subclass is indented under subclass 170.3. Compositions wherein the benzene ring is attached directly to two -C(=O)O- groups by nonionic bonding.

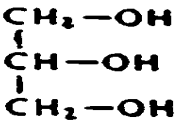
170.32 With organic compound containing oxygen (e.g., alcohol, ketone, additional carboxylic acid ester, etc.):
This subclass is indented under subclass 170.31. Compositions which contain an organic compound which has at least one oxygen atom therein in addition to the cellulose ester or salt thereof and a compound containing two -C(=O)O- groups attached directly to the same benzene ring.

170.33 Cycloaliphatic ring attached directly or indirectly to the -C(=O)O- groups by nonionic bonding:
This subclass is indented under subclass 170.29. Compositions wherein the -C(=O)O- groups are attached directly or indirectly to a cycloaliphatic ring.

(1) Note. Alicyclic (cycloaliphatic) denotes (a) Cycloparaffins (saturated), (b) Cycloolefins (unsaturated with one or more double bonds), and (c) Cycloacetylenes or cyclynes (unsaturated with triple bond)

170.34 Esterified dihydric or polyhydric alcohol:
This subclass is indented under subclass 170.29. Compositions wherein the plural -C(=O)O- groups are produced by reacting carboxylic acids with alcohol having two or more hydroxyl (-OH) groups.

170.35 The polyhydric alcohol is glycerol (e.g., triacetin, tripropionin, glyceryl diproprionate, glyceryl diproprionate monoacetate, etc.):
This subclass is indented under subclass 170.34. Compositions wherein the esterified polyhydric alcohol is an alcohol with the following structure:



170.36 Nitrogen, sulfur, halogen, or oxygen other than in -C(=O)O- group attached indirectly to the -C(=O)O- groups by nonionic bonding:
This subclass is indented under subclass 170.29. Compositions wherein the -C(=O)O- groups are attached indirectly to nitrogen, sulfur, ether oxygen, hydroxy (-OH), or halogen by nonionic bonding.

170.37 Nitrogen attached indirectly to the -C(=O)O- group by nonionic bonding:
This subclass is indented under subclass 170.27. Compositions wherein the -C(=O)O- group is attached indirectly to nitrogen by nonionic bonding.

170.38 Oxygen attached indirectly to the -C(=O)O- group by nonionic bonding:
This subclass is indented under subclass 170.27. Compositions wherein the -C(=O)O- group is attached indirectly to oxygen by nonionic bonding.

170.39 Benzene ring attached directly or indirectly to the -C(=O)O- group by nonionic bonding:
This subclass is indented under subclass 170.38. Compositions wherein the -C(=O)O- group is attached directly or indirectly to oxygen and to a benzene ring.

170.4 With organic compound containing oxygen (e.g., alcohol, ketone, additional carboxylic acid ester, etc.):
This subclass is indented under subclass 170.27. Compositions which contain an organic compound which has at least one oxygen atom therein in addition to the cellulose ester or salt thereof and the compound having carbon bonded directly to the single bonded oxygen of the -C(=O)O- group.

170.41 Metal or nitrogen salt:
This subclass is indented under subclass 170.26. Compositions wherein the hydrogen of the carboxylic acid is replaced by a metal or ammonium or substituted ammonium.

170.42 With organic compound containing nitrogen:
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof an organic compound which has at least one nitrogen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
164.3, 166.4+, 169.46+, 190.1, and 200.1+, for compositions containing lignocellulosic material, cellulose xanthate, cellulose nitrate, cellulose ether or salt thereof, or a cellulosic material and organic compound containing nitrogen.

170.43 Chalcogen and nitrogen in the same compound:
This subclass is indented under subclass 170.42. Compositions wherein the organic compound has nitrogen and chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

170.44 The nitrogen is single bonded directly to carbon of a -C(=X)- group (X is chalcogen):
This subclass is indented under subclass 170.43. Compositions wherein the organic nitrogen compound has the carbon of a -C(=X)- group single bonded directly to the nitrogen (X is oxygen, sulfur, selenium, or tellurium).

170.45 The nitrogen is single bonded directly to sulfur of a -S(=O)(=O)- group (i.e., sulfonamide):
This subclass is indented under subclass 170.43. Compositions wherein the organic compound contains a $-SO_2N<<$ group.

170.46 With organic compound containing sulfur:
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof an organic compound which has at least one sulfur atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166.3+, 169.45, 191.1, and 202.1, for compositions containing cellulose xanthate, cellulose nitrate, cellulose ether or salt, or a cellulosic material and organic compound containing sulfur.

170.47 With organic -C(=O)- group containing compound (e.g., aldehyde, ketone, etc.):
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof an organic compound having a -C(=O)- group.

SEE OR SEARCH THIS CLASS, SUBCLASS:
169.48, and 192.1, for compositions containing cellulose nitrate or cellulose ether or salt thereof and organic (-C(=O)-) group containing compound.

170.48 Carbocyclic ring containing:
This subclass is indented under subclass 170.47. Compositions wherein the organic compound has a benzene or alicyclic (cycloaliphatic) ring attached directly or indirectly to the -C(=O)- group by nonionic bonding.

(1) Note. Alicyclic (cycloaliphatic) denotes (a) Cycloparaffins (saturated), (b) cycloolefins (unsaturated with one or more double bonds), and (c) cycloacetylenes or cyclynes (unsaturated with triple bond).

170.49 With organic -C(-OH)- group containing compound, where the H of the -OH group can be replaced by a metal (e.g. alkanol, phenol, polyol, phenolate, etc.):
This subclass is indented under subclass 170.47. Compositions which contain an organic compound having a carbon bonded directly to a -OH group, where metal can replace the H of the -OH group in addition to the cellulose ester or salt thereof and the organic (-C(=O)-) group containing compound.

170.5 With ether except dialkylene or polyalkylene glycol:
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof an organic compound having a-C-O-C- group except dialkylene or polyalkylene glycol.

SEE OR SEARCH THIS CLASS, SUBCLASS:
169.49+, and 193.1, for compositions containing cellulose nitrate or cellulose ether or salt thereof and organic (-C-O-C-) group containing compound.

170.51 With organic -C(-OH)- group containing compound, where the H of the -OH group can be replaced by a metal (e.g., alkanolate, alkanol, polyol, dialkylene glycol, etc.):
This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof an organic compound having a carbon bonded directly to a -OH group, where metal can replace the H of the -OH group.

SEE OR SEARCH THIS CLASS, SUBCLASS:
169.51+, and 194.1+, for compositions containing cellulose nitrate or cellulose ether or salt thereof and organic-C(-OH)- group containing compound.

170.52 Carbocyclic ring containing:
This subclass is indented under subclass 170.51. Compositions wherein the organic compound has a benzene or alicyclic (cycloaliphatic) ring attached directly or indirectly to the -C(-OH)- group by nonionic bonding.

(1) Note. Alicyclic (cycloaliphatic) denotes (a) Cycloparaffins (saturated), (b) cycloolefins (unsaturated with one or more double bonds), and (c) cycloacetylenes or cyclynes (unsaturated with triple bond)

170.53 With organic compound containing halogen:
This subclass is indented under subclass 170.51. Compositions which contain in addition to the cellulose ester or salt thereof and the organic -C(-OH)- group containing compound an organic compound which has at least one halogen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

170.54 Three or more halogens containing or with additional organic compound containing halogen:

This subclass is indented under subclass 170.53. Compositions which contain in addition to the cellulose ester or salt thereof and the organic -C(-OH)- group containing compound (a) an organic compound containing three or more halogens or (b) two or more organic compounds containing halogens.

170.55 With organic compound containing halogen:

This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof an organic compound which has at least one halogen atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:

195.1, for compositions containing cellulose ether or salt thereof and organic compound containing halogen.

170.56 With bituminous or tarry residue, hydrocarbon, or naturally occurring wax:

This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof (a) a composition or compound having the characteristics of a tar or pitch no matter what the origin, (b) an organic compound consisting exclusively of the elements carbon and hydrogen, or (c) a naturally occurring low-melting organic mixture or compound of hydrocarbons or esters of fatty acids and alcohols having the characteristics of wax (solid at room temperature).

(1) Note. Examples of components included herein are alkanes, alkenes, olefins, montan wax, ceresin wax, carnauba wax, all asphalts, bitumens, pitches and tars from coal, mineral oil, cotton seed pitch and the residue from the destructive distillation of wood, and natural oil distillations.

170.57 With elemental silicon or inorganic silicon compound:

This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof an elemental silicon or an inorganic compound containing silicon.

170.58 With elemental metal or alloy or metal compound:

This subclass is indented under subclass 168.01. Compositions which contain in addition to the cellulose ester or salt thereof a free metal, a mixture of two or more metals or of one or more metals with certain nonmetallic elements (e.g., carbon steel), or a compound of metal.

(1) Note. See this class, subclass 163.01, (4) Note for the definition of alloy.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.56, and 198.1, for compositions containing cellulose nitrate or cellulose ether or salt thereof and elemental metal or alloy or metal compound.

171.1 Cellulose acetate:

This subclass is indented under subclass 168.01. Compositions wherein the cellulose ester is cellulose acetate.

172.1 Cellulose ether or salt thereof:

This subclass is indented under subclass 163.01. Compositions wherein the cellulosic material is a compound having the general formula ROR4, wherein RO- is the cellulose residue moiety and R4 is an ether forming radical.

(1) Note. Cellulose ether is made by etherifying the hydroxyl groups of cellulose.

173.01 With nitrogen hetero ring compound:

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof an organic compound having a hetero ring containing nitrogen as a hetero atom.

(1) Note. See this class, subclass 163.01, (5) Note for the definition of hetero ring.

SEE OR SEARCH THIS CLASS, SUBCLASS:

166.41, 169.1+, 170.1+, and 200.2, for compositions containing cellulose xanthate, cellulose nitrate, cellulose ester or salt, or a cellulosic material and nitrogen containing hetero ring.

174.1 With chalcogen hetero ring compound:

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof an organic compound having a hetero ring containing chalcogen (i.e., oxygen, sulfur, selenium, or tellurium) as a hetero atom.

(1) Note. See this class, subclass 163.01, (5) Note for the definition of hetero ring.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.12+,and 170.12+, for compositions containing cellulose nitrate or cellulose ester or salt and chalcogen containing hetero ring.

174.2 The chalcogen in the ring is sulfur:

This subclass is indented under subclass 174.1. Compositions wherein the hetero atom in the ring is sulfur.

175.1 With phosphorus compound:

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof a compound of phosphorus.

(1) Note. Phosphorus compounds are often used as plasticizers and fire retardants.

SEE OR SEARCH THIS CLASS, SUBCLASS:

166.2, 169.14+, and 170.15+, for compositions containing cellulose xanthate, cellulose nitrate, or cellulose ester or salt and phosphorus compound.

176.1 With boron compound:

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof a compound of boron.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.16, and 170.19, for compositions containing cellulose nitrate or cellulose ester or salt and boron compound.

177.1 With organic compound containing silicon:

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof an organic compound which has at least one silicon atom therein.

SEE OR SEARCH THIS CLASS, SUBCLASS:

166.1, 169.17, and 170.2, for compositions containing cellulose xanthate, cellulose nitrate, or cellulose ester or salt and organic compound containing silicon.

178.1 With natural resin or derivative:

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof a natural resin or derivative of a natural resin.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, or sulfurized resin, or salt thereof.

SEE OR SEARCH THIS CLASS, SUBCLASS:

164.41+,169.18+, and 170.21, for compositions containing natural resin or derivative and lignocellulosic material, cellulose nitrate or cellulose ester or salt thereof.

179.1 With lanolin, fat, or fatty oil or derivative thereof (e.g., lard, tallow, castor oil, linseed oil, etc.):

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof lanolin, fat, or fatty oil or the derivatives thereof.

(1) Note. Definitions can be found in the Glossary below.

(2) Note. Examples of derivative included herein are esterified, oxidized, polymerized, vulcanized, or hydrogenized fatty oil, fat, or lanolin.

(3) Note. Included herein are oils derived from plant and animal origin (e.g., castor, coconut, corn, soybean, olive, cottonseed, safflower, fish, fish-liver, sperm, etc.) and the functional oils, such as drying oils (linseed, tung, oiticica), semidrying oils (soybean, cottonseed), and nondrying oils (castor, coconut).

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.26+, and 170.23+, for compositions containing cellulose nitrate or cellulose ester or salt thereof and lanolin, fat, or fatty oil or derivative thereof.

GLOSSARY

FAT, FATTY OIL

The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

LANOLIN

Cholesterol esters of higher fatty acids;

180.1 With terpene or derivative (e.g. camphor, pine oil, terpineol, borneol, etc.):

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof a terpene or reaction products wherein the terpene structure is not destroyed.

(1) Note. Terpene denotes a hydrocarbon having two or more isoprene units (C_5H_8). Most terpenes have carbon skeleton of 10, 15, 20, or 30 atoms.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.28+, and 170.25, for compositions containing cellulose nitrate or cellulose ester or salt thereof and terpene or derivative thereof.

181.1 With organic -C(=O)O- group containing compound except wax (e.g., fatty acid, dicarboxylic acid, etc.):

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof an organic compound containing the -C(=O)O- group except wax.

(1) Note. Examples of compounds included herein are the carboxylic acids such as dicarboxylic acid, and fatty acid.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.33+, and 170.26+, for compositions containing cellulose nitrate or cellulose ester or salt thereof and organic-C(=O)O- group containing compound.

182.1 Carbon bonded directly to the single bonded oxygen of the -C(=O)O- group (e.g., fatty acid ester, acid anhydride, etc.):

This subclass is indented under subclass 181.1. Compositions wherein the organic -C(=O)O- group containing compound has the single bonded oxygen of the -C(=O)O- group single bonded to an additional carbon atom.

183.1 Nitrogen or chalcogen bonded directly to the carbon of the -C(=O)O- group (e.g., diethyl carbonate, dodecyl phenylcarbamate, octyl carbanilate, urethane, etc.):

This subclass is indented under subclass 182.1. Compositions wherein the carbon of the -C(=O)O- group is bonded directly to a nitrogen or to a chalcogen (i.e., oxygen, sulfur, selenium, or tellurium).

184.1 Plural -C(=O)O- groups attached directly or indirectly to each other by nonionic bonding:
This subclass is indented under subclass 182.1. Compositions wherein the -C(=O)O- group is attached directly or indirectly to one or more -C(=O)O- groups by nonionic bonding.

184.2 Exactly two -C(=O)O- groups attached directly to the same benzene ring by nonionic bonding:
This subclass is indented under subclass 184.1. Compositions wherein a benzene ring is attached directly to two-C (=O)O- groups by nonionic bonding.

184.3 Esterified dihydric or polyhydric alcohol:
This subclass is indented under subclass 184.1. Compositions wherein the plural -C(=O)O- groups are produced by reacting carboxylic acids with alcohol having two or more hydroxyl -OH groups.

185.1 Nitrogen attached indirectly to the -C(=O)O- group by nonionic bonding:
This subclass is indented under subclass 182.1. Compositions wherein the -C(=O)O- group is attached indirectly to nitrogen by nonionic bonding.

186.1 Oxygen attached indirectly to the -C(=O)O- group by nonionic bonding:
This subclass is indented under subclass 182.1. Compositions wherein the -C(=O)O- group is attached indirectly to oxygen by nonionic bonding.

186.2 Benzene ring attached directly or indirectly to the -C(=O)O- group by nonionic bonding:
This subclass is indented under subclass 186.1. Compositions wherein the -C(=O)O- group is attached directly or indirectly to oxygen and to a benzene ring.

187.1 With organic compound containing oxygen (e.g., alcohol, ketone, additional carboxylic acid ester, etc.):
This subclass is indented under subclass 182.1. Compositions which contain an organic compound which has at least one oxygen atom therein in addition to the cellulose ether or salt thereof and the compound having carbon bonded directly to the single bonded oxygen of the -C(=O)O- group.

188.1 With organic compound containing halogen:
This subclass is indented under subclass 182.1. Compositions which contain in addition to the cellulose ether or salt thereof and the compound having carbon bonded directly to the single bonded oxygen of the -C(=O)O- group an organic compound which has at least one halogen atom therein.

189.1 Metal or nitrogen salt:
This subclass is indented under subclass 181.1. Compositions wherein the hydrogen of the carboxylic acid is replaced by a metal or ammonium or substituted ammonium.

190.1 With organic compound containing nitrogen:
This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof an organic compound which has at least one nitrogen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
164.3, 166.4+, 169.46+, 170.42+, and 200.1+, for compositions containing lignocellulosic material, cellulose xanthate, cellulose nitrate, cellulose ester or salt thereof, or a cellulosic material and organic compound containing nitrogen.

191.1 With organic compound containing sulfur:
This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof an organic compound which has at least one sulfur atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:

166.3+, 169.45, 170.46, and 202.1, for compositions containing cellulose xanthate, cellulose nitrate, cellulose ester or salt, or a cellulosic material and organic compound containing sulfur.

192.1 With organic -C(=O)- group containing compound (e.g., aldehyde, ketone, etc.):

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof an organic compound having a carbonyl -C(=O)- group.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.48, and 170.47+, for compositions containing cellulose nitrate or cellulose ester or salt thereof and organic (-C(=O)-) group containing compound.

193.1 With ether except dialkylene or polyalkylene glycol:

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof an organic compound having an ether -C-O-C- group except dialkylene or polyalkylene glycol.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.49+, and 170.5, for compositions containing cellulose nitrate or cellulose ester or salt thereof and organic (-C-O-C-) group containing compound.

194.1 With organic -C(-OH)- group containing compound, where the H of the -OH group can be replaced by a metal (e.g. alkanol, phenol, alkanolate, phenolate, etc.):

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof an organic compound having a carbon bonded directly to a -OH group, where metal can replace the H of the -OH group.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.51+, and 170.51+, for compositions containing cellulose nitrate or cellulose ester or salt thereof and organic-C(-OH)- group containing compound.

194.2 Plural hydroxyl groups containing (e.g., glycol, glycerol, etc.):

This subclass is indented under subclass 194.1. Compositions wherein the organic compound has two or more hydroxyl (-OH) groups.

194.3 With organic compound containing halogen:

This subclass is indented under subclass 194.1. Compositions which contain in addition to the cellulose ether or salt thereof and the organic -C(-OH)- group containing compound an organic compound which has at least one halogen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

195.1 With organic compound containing halogen:

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof an organic compound which has at least one halogen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:

170.55, for compositions containing cellulose ester or salt thereof and organic compound containing halogen.

196.1 With bituminous or tarry residue, hydrocarbon, or naturally occurring wax:

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof (a) a composition or compound having the characteristics of a tar or pitch no matter what the origin, (b) an organic compound consisting exclusively of the elements carbon and hydrogen, or (c) a naturally occurring low-melting organic mixture or compound of hydrocarbons or esters of fatty acids and alcohols having the characteristics of wax (solid at room temperature).

(1) Note. Examples of components included herein are alkanes, alkenes, olefins, montan wax, ceresin wax, carnauba wax, all asphalts, bitumens, pitches and tars from coal, mineral oil, cotton seed pitch and the residue from the destructive distillation of wood, and natural oil distillations.

197.01 With elemental silicon or inorganic silicon compound:

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof an elemental silicon or an inorganic compound containing silicon.

198.1 With elemental metal or alloy or metal compound:

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof free metal, mixture of two or more metals or of one or more metals with certain nonmetallic elements (e.g., carbon steel), or compound of metal. free metal, mixture of two or more metals or of one or more metals with certain nonmetallic elements (e.g., carbon steel), or compound of metal.

(1) Note. See this class, subclass 163.01, (4) Note for the definition of alloy.

SEE OR SEARCH THIS CLASS, SUBCLASS:

169.56, and 170.58, for compositions containing cellulose nitrate, or cellulose ester or salt thereof and elemental metal or alloy or metal compound.

199.1 With elemental carbon (e.g., graphite, coal, carbon black, etc.):

This subclass is indented under subclass 172.1. Compositions which contain in addition to the cellulose ether or salt thereof carbon in substantially pure form including its crystalline allotrope (i.e., graphite) and amorphous allotropes (e.g., coal, coke, carbon black, etc.).

200.1 With organic compound containing nitrogen (e.g., amine, quaternary ammonium halide, etc.):

This subclass is indented under subclass 163.01. Compositions which contain in addition to the cellulosic material an organic compound which has at least one nitrogen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:

164.3, 166.4, 169.46, 170.42, and 190.1, for compositions containing lignocellulosic material, cellulose xanthate, cellulose nitrate, cellulose ester or salt, or cellulose ether or salt and organic compound containing nitrogen.

200.2 The nitrogen is part of a hetero ring:

This subclass is indented under subclass 200.1. Compositions wherein the organic compound containing nitrogen is part of a hetero ring containing nitrogen as a hetero atom.

(1) Note. See this class, subclass 163.01, (5) Note for the definition of hetero ring.

SEE OR SEARCH THIS CLASS, SUBCLASS:

166.41, 169.1, 170.1, and 172.1, for compositions containing cellulose xanthate, cellulose nitrate, cellulose ester or salt, or cellulose ether or salt and nitrogen containing hetero ring.

200.3 Oxygen and nitrogen in the same compound (e.g., amide, ammonium alkyl sulfonate, urea, tertiary amine oxide, etc.):

This subclass is indented under subclass 200.1. Compositions wherein the organic compound containing nitrogen has both nitrogen and oxygen in the same compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:

166.42, for compositions containing cellulose xanthate and oxygen attached directly or indirectly to an organic compound containing nitrogen.

200.4 Alkanol amine or salt thereof (e.g., monoethanolamine formate, monoethanolamine hydrochloride, triethanolamine, etc.):
This subclass is indented under subclass 200.3. Compositions wherein the organic compound has a nitrogen attached directly to the carbon of an alkyl alcohol or salt thereof.

201.1 With organic compound containing halogen:
This subclass is indented under subclass 163.01. Compositions which contain in addition to the cellulosic material an organic compound which has at least one halogen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166.6, 170.55 and 195.1, for compositions containing cellulose xanthate, cellulose ester or salt, or cellulose ether or salt and an organic compound containing halogen.

202.1 With organic compound containing sulfur:
This subclass is indented under subclass 163.01. Compositions which contain in addition to the cellulosic material an organic compound which has at least one sulfur atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166.3, 169.45, 170.46, and 191.1, for compositions containing cellulose xanthate, cellulose nitrate, cellulose ester or salt , or cellulose ether or salt and organic compound containing sulfur.

203.1 With organic compound containing oxygen:
This subclass is indented under subclass 163.01. Compositions which contain in addition to the cellulosic material an organic compound which has at least one oxygen atom therein.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166.5, for compositions containing cellulose xanthate and organic compound containing oxygen.

203.2 Dihydric or polyhydric alcohol or ether derivative thereof:
This subclass is indented under subclass 203.1. Compositions wherein the organic compound has two or more -OH groups, each of which is bonded directly to a carbon, which carbon may be single bonded to any element but may be multiple bonded only to carbon or ether derivative thereof whereby the H of the -OH group is replaced by a C.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166.52, for compositions containing cellulose xanthate and dihydric or polyhydric alcohol.

203.3 Natural resin or organic -C(=O)O- compound (e.g., rosin, tall oil, tallow, castor oil, carboxylic acid, ester wax, etc.):
This subclass is indented under subclass 203.1. Compositions wherein the organic compound containing oxygen is (a) a natural resin, or (b) a compound in which the carbon of the -C(=O)O- group is, or is attached directly or indirectly by nonionic bonding to, the carbon of an organic compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
166.51, for compositions containing cellulose xanthate and a natural resin or organic -C(=O)O- compound.

204.01 With element or inorganic compound except water:
This subclass is indented under subclass 163.01. Compositions which contain in addition to the cellulosic material elemental material or any inorganic compound except water.

(1) Note. See this class, subclass 163.01, (2) Note for the definition of an organic compound.

(2) Note. Examples of components included herein are carbon disulfide, carbon black, metal alloy, metal dust, sodium chloride, and calcium carbonate.

SEE OR SEARCH THIS CLASS, SUBCLASS:

164.5, and 166.8, for compositions containing lignocellulosic material or cellulose xanthate and inorganic compound or element, other than water.

204.2 Elemental titanium or inorganic titanium compound:

This subclass is indented under subclass 204.01. Compositions wherein the inorganic compound or element is elemental titanium or inorganic compound containing titanium.

SEE OR SEARCH THIS CLASS, SUBCLASS:

166.81, for compositions containing cellulose xanthate and inorganic compound containing titanium.

204.3 Elemental silicon or inorganic silicon compound:

This subclass is indented under subclass 204.01. Compositions wherein the inorganic compound or element is elemental silicon or inorganic compound containing silicon.

SEE OR SEARCH THIS CLASS, SUBCLASS:

164.51, 166.82, 169.55, 170.57, and 197.01, for compositions containing lignocellulosic material, cellulose xanthate, cellulose nitrate, cellulose ester or salt, or cellulose ether or salt and elemental silicon or inorganic compound containing silicon.

205.01 Carbohydrate gum, dextrin or derivative (e.g., arabic, tragacanth, guar, karaya, agar agar, algin, irish moss, etc.):

This subclass is indented under subclass 162.1. Compositions wherein the carbohydrate or derivative is dextrin, carbohydrate gum, or derivative thereof.

(1) Note. Dextrin consists of various gummy polysaccharides produced by thermal or acid degradation of starch.

(2) Note. Carbohydrate gums are highly branched polysaccharides composed of two or more monosaccharides, and are exudations of plants produced by the plant to cover wounds and to prevent attack by organisms.

(3) Note. Carbohydrate gums include but are not limited to: Arabic, tragacanth, xanthan, galactomannan, irish moss, carrageenan, karaya, agar agar, algin, guar, xylogalactan, and glucomannan.

(4) Note. Examples of derivatives included herein are esterified, etherified, sulfonated, and borated.

205.1 With hetero ring compound except carbohydrate:

This subclass is indented under subclass 205.01. Compositions which contain dextrin, or derivative thereof, an organic compound having a hetero ring in addition to the carbohydrate gum.

(1) Note. Hetero ring is a ring having only carbon and at least one atom from the group consisting of nitrogen, oxygen, sulfur, selenium and tellurium as ring members.

205.2 With phosphorus compound:

This subclass is indented under subclass 205.01. Compositions which contain dextrin, or derivative thereof, a compound of phosphorus in addition to the carbohydrate gum.

205.3 With boron compound:
This subclass is indented under subclass 205.01. Compositions which contain dextrin, or derivative thereof, a compound of boron in addition to the carbohydrate gum.

205.31 With organic compound containing oxygen:
This subclass is indented under subclass 205.3. Compositions which contain an organic compound which has at least one oxygen atom therein in addition to the boron compound.

(1) Note. See this class, subclass 162.1, (2) Note for the definition of an organic compound.

205.4 With natural resin or derivative:
This subclass is indented under subclass 205.01. Compositions which contain dextrin, or derivative thereof, a natural resin or a chemical modification of a natural resin in addition to the carbohydrate gum.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, japan, japan varnish, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, and sulfurized resins, or salts thereof.

205.5 With terpene or derivative, lanolin, fat, or fatty oil:
This subclass is indented under subclass 205.01. Compositions which contain dextrin, or derivative thereof, a terpene or a chemical modification of a terpene, lanolin, fat, or fatty oil in addition to the carbohydrate gum.

(1) Note. Terpene denotes a hydrocarbon having two or more isoprene units (C_5H_8). Most terpenes have carbon skeleton of 10, 15, 20, or 30 atoms.

(2) Note. The term “derivative” herein is intended to include a chemical modification of the terpene wherein the terpene structure is not destroyed or wherein the terpene structure is indeterminate.

GLOSSARY

FAT, FATTY OIL

The glyceryl triester (triglyceride) of the same or different higher fatty acids (e.g., oleic, myristic, palmitic, stearic, linolenic, etc.) or mixtures thereof present in a single oil or fat (e.g., lard, tallow, castor oil, etc.);

LANOLIN

Cholesterol esters of higher fatty acids;

205.6 With organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 205.01. Compositions which contain dextrin, or derivative thereof, an organic compound which has at least one sulfur or nitrogen atom therein in addition to the carbohydrate gum.

(1) Note. See this class, subclass 162.1, (2) Note for the definition of an organic compound.

205.7 With organic compound containing oxygen except wax:
This subclass is indented under subclass 205.01. Compositions which contain, in addition to the carbohydrate gum, dextrin, or derivative thereof, an organic compound which has at least one oxygen atom therein except wax.

205.71 The oxygen is part of a -C(=O)O- group:
This subclass is indented under subclass 205.7. Compositions wherein the organic compound containing oxygen has a carboxylate group (i.e., -C(=O)O-).

205.72 Dihydric or polyhydric alcohol:
This subclass is indented under subclass 205.7. Compositions wherein the organic compound containing oxygen is an alcohol with two or more hydroxyl (-OH) groups.

205.8 With bituminous or tarry residue, hydrocarbon, or naturally occurring wax:
This subclass is indented under subclass 205.01. Compositions which contain, in addition to the carbohydrate gum, dextrin, or derivative thereof, (a) a composition or compound having the characteristics of a tar or pitch no matter what the origin, (b) an organic compound consisting exclusively of the elements carbon and hydrogen, or (c) a naturally occurring low-melting organic mixture or compound of hydrocarbons or esters of fatty acids and alcohols having the characteristics of wax (solid at room temperature).

(1) Note. Examples of components included herein are alkanes, alkenes, olefins, montan wax, ceresin wax, carnauba wax, all asphalts, bitumens, pitches and tars from coal, mineral oil, cotton seed pitch and the residue from the destructive distillation of wood, and natural oil distillations.

205.9 With element or inorganic compound except water:
This subclass is indented under subclass 205.01. Compositions which contain dextrin, or derivative thereof, elemental material or any inorganic compound except water in addition to the carbohydrate gum.

(1) Note. See this class, subclass 162.1, (4) Note for the definition of an organic compound.

206.1 Starch or derivative:
This subclass is indented under subclass 162.1. Compositions wherein the carbohydrate or derivative is a compound containing amylose and amylopectin as its main components or derivatives thereof.

(1) Note. Starches are heterogenous in that the amylose and amylopectin occur in different ratios to each other.

(2) Note. Included herein are starch fractions such as amylose and amylopectin as well as modified starches (e.g., thin boiling starches, etc.).

207.1 Starch ester:
This subclass is indented under subclass 206.1. Compounds wherein the starch derivative results from the reaction of a hydroxyl group of starch with an acid.

(1) Note. The esterifying acid may be organic or inorganic.

(2) Note. This subclass does not provide for compounds formed when the sole acid moiety entering into the formation is a halogen.

207.2 With hetero ring compound except carbohydrate:
This subclass is indented under subclass 207.1. Compositions which contain an organic compound having a hetero ring except a carbohydrate in addition to the starch ester.

(1) Note. Hetero ring is a ring having only carbon and at least one atom from the group consisting of nitrogen, oxygen, sulfur, selenium and tellurium as ring members.

207.3 With phosphorus compound or boron compound or organic compound containing silicon:
This subclass is indented under subclass 207.1. Compositions which contain a compound of phosphorus, a compound of boron, or an organic compound which has at least one silicon atom therein in addition to the starch ester.

(1) Note. See this class, subclass 162.1, (2) Note for the definition of an organic compound.

207.4 With organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 207.1. Compositions which contain an organic compound which has at least one sulfur or nitrogen atom therein in addition to the starch ester.

(1) Note. See this class, subclass 162.1, (2) Note for the definition of an organic compound.

207.5 With organic compound containing oxygen except wax:
This subclass is indented under subclass 206.1. Compositions which contain an organic compound which has at least one oxygen atom therein except wax in addition to the starch or derivative thereof.

208.1 Oxidized starch:
This subclass is indented under subclass 206.1. Compounds wherein the starch derivative is a starch which has undergone oxidation.

208.2 With hetero ring compound except carbohydrate:
This subclass is indented under subclass 208.1. Compositions which contain an organic compound having a hetero ring except a carbohydrate in addition to the oxidized starch.

(1) Note. Hetero ring is a ring having only carbon and at least one atom from the group consisting of nitrogen, oxygen, sulfur, selenium and tellurium as ring members.

208.3 With phosphorus compound or boron compound or organic compound containing silicon:
This subclass is indented under subclass 208.1. Compositions which contain, in addition to the oxidized starch, a compound of phosphorus, a compound of boron, or an organic compound which has at least one silicon atom therein.

(1) Note. See this class, subclass 162.1, (2) Note for the definition of an organic compound.

208.4 With organic compound containing sulfur or nitrogen:
This subclass is indented under subclass 208.1. Compositions which contain an organic compound which has at least one sulfur or nitrogen atom therein in addition to the oxidized starch.

(1) Note. See this class, subclass 162.1, (2) Note for the definition of an organic compound.

208.5 With organic compound containing oxygen except wax:
This subclass is indented under subclass 208.1. Compositions which contain an organic compound which has at least one oxygen atom therein except wax in addition to the oxidized starch.

209.1 With hetero ring compound except carbohydrate:
This subclass is indented under subclass 206.1. Compositions which contain an organic compound having a hetero ring except a carbohydrate in addition to the starch or derivative thereof.

(1) Note. Hetero ring is a ring having only carbon and at least one atom from the group consisting of nitrogen, oxygen, sulfur, selenium, and tellurium as ring members.

210.1 With phosphorus compound:
This subclass is indented under subclass 206.1. Compositions which contain a compound of phosphorus in addition to the starch or derivative thereof.

211.1 With boron compound:
This subclass is indented under subclass 206.1. Compositions which contain a compound of boron in addition to the starch or derivative thereof.

212.1 With organic compound containing silicon:
This subclass is indented under subclass 206.1. Compositions which contain, in addition to the starch or derivative thereof, an organic compound which has at least one silicon atom therein.

(1) Note. See this class, subclass 162.1, (2) Note for the definition of an organic compound.

213.1 With organic compound containing sulfur:
This subclass is indented under subclass 206.1. Compositions which contain an organic compound which has at least one sulfur atom therein in addition to the starch or derivative thereof.

(1) Note. See this class, subclass 162.1, (2) Note for the definition of an organic compound.

214.1 With organic compound containing nitrogen:
This subclass is indented under subclass 206.1. Compositions which contain an organic compound which has at least one nitrogen atom therein in addition to the starch or derivative thereof.

(1) Note. See this class, subclass 162.1, (2) Note for the definition of an organic compound.

214.2 Nitrogen and oxygen in the same compound:
This subclass is indented under subclass 214.1. Compositions wherein the organic compound has both nitrogen and oxygen.

215.1 With organic compound containing oxygen except wax:
This subclass is indented under subclass 206.1. Compositions which contain an organic compound which has at least one oxygen atom therein except wax in addition to the starch or derivative thereof.

215.2 The oxygen is part of a -C(=O)O- group:
This subclass is indented under subclass 215.1. Compositions wherein the organic compound containing oxygen has a carboxylate group (i.e., -C(=O)O-).

215.3 Carbon bonded directly to the single bonded oxygen of the -C(=O)O- group:
This subclass is indented under subclass 215.2. Compositions wherein the organic -C(=O)O- group containing compound has the single-bonded oxygen of the -C(=O)O- group single bonded to an additional carbon atom.

215.4 Plural -C(=O)O- groups:
This subclass is indented under subclass 215.3. Compositions wherein the organic -C(=O)O- group containing compound has two or more carboxylate groups.

215.5 Dihydric or polyhydric alcohol:
This subclass is indented under subclass 215.1. Compositions wherein the organic compound containing oxygen is an alcohol with two or more hydroxyl (-OH) groups.

216.1 With bituminous or tarry residue, hydrocarbon, or naturally occurring wax:
This subclass is indented under subclass 206.1. Compositions which contain, in addition to the starch or derivative thereof, (a) a composition or compound having the characteristics of a tar or pitch no matter what the origin, (b) an organic compound consisting exclusively of the elements carbon and hydrogen, or (c) a naturally occurring low-melting organic mixture or compound of hydrocarbons or esters of fatty acids and alcohols having the characteristics of wax (solid at room temperature).

(1) Note. Examples of components included herein are alkanes, alkenes, olefins, montan wax, ceresin wax, carnauba wax, all asphalts, bitumens, pitches and tars from coal, mineral oil, cotton seed pitch and the residue from the destructive distillation of wood, and natural oil distillations.

217.01 With element or inorganic compound except water:
This subclass is indented under subclass 206.1. Compositions which contain elemental material or any inorganic compound except water in addition to the starch or derivative thereof.

(1) Note. See this class, subclass 162.1, (2) Note for the definition of an organic compound.

217.1 Elemental halogen or halogen containing:
This subclass is indented under subclass 217.01. Compositions wherein the inorganic compound or element is an inorganic compound containing halogen or elemental halogen.

217.2 Alkali or alkaline earth metal hydroxide (e.g., caustic soda, caustic alkali, caustic lime, etc.):
This subclass is indented under subclass 217.01. Compositions wherein the inorganic compound is an alkali metal hydroxide or an alkaline earth metal hydroxide.

(1) Note. The alkali metals are lithium, sodium, potassium, rubidium, cesium, and francium.

(2) Note. The alkaline earth metals are magnesium, calcium, strontium, barium, and radium.

217.3 Elemental silicon or silicon containing:
This subclass is indented under subclass 217.01. Compositions wherein the inorganic compound or element is an inorganic compound containing silicon or elemental silicon.

217.4 With natural resin or derivative:
This subclass is indented under subclass 162.1. Compositions which contain a natural resin or a chemical modification of a natural resin in addition to the carbohydrate or derivative thereof.

(1) Note. Natural resins include but are not limited to shellac, copals from various sources (e.g., congo, manila, etc.), amber, dammar, dead dammar, gum rosin, japan, japan varnish, rosin (colophony), tall oil (liquid rosin), wood rosin, burgundy pitch, gurjun balsam, canada balsam, sandrac, mastic, accroides, benzoin, elemi, gamboge, gum thus, venice turpentine, bordeaux turpentine, abietic acid, and pimaric acid.

(2) Note. Examples of derivatives included herein are hydrogenated, esterified, polymerized, and sulfurized resins, or salts thereof.

217.5 With hetero ring compound except carbohydrate:
This subclass is indented under subclass 162.1. Compositions which contain an organic compound having a hetero ring except a carbohydrate in addition to the carbohydrate or derivative thereof.

(1) Note. Hetero ring is a ring having only carbon and at least one atom from the group consisting of nitrogen, oxygen, sulfur, selenium, and tellurium as ring members.

217.6 With organic compound containing nitrogen:
This subclass is indented under subclass 162.1. Compositions which contain an organic compound which has at least one nitrogen atom therein in addition to the carbohydrate or derivative thereof.

(1) Note. See this class, subclass 162.1, (2) Note for the definition of an organic compound.

217.7 With organic compound containing oxygen except wax:
This subclass is indented under subclass 162.1. Compositions which contain an organic compound which has at least one oxygen atom therein except wax in addition to the carbohydrate or derivative thereof.

217.8 With bituminous or tarry residue, hydrocarbon, or naturally occurring wax:
This subclass is indented under subclass 162.1. Compositions which contain, in addition to the carbohydrate or derivative thereof, (a) a composition or compound having the characteristics of a tar or pitch no matter what the origin, (b) an organic compound consisting exclusively of the elements carbon and hydrogen, or (c) a naturally-occurring low-melting organic mixture or compound of hydrocarbons or esters of fatty acids and alcohols having the characteristics of wax (solid at room temperature).

(1) Note. Examples of components included herein are alkanes, alkenes, olefins, montan wax, ceresin wax, carnauba wax, all asphalts, bitumens, pitches and tars from coal, mineral oil, cotton seed pitch and the residue from the destructive distillation of wood, and natural oil distillations.

217.9 With element or inorganic compound except water:
This subclass is indented under subclass 162.1. Compositions which contain elemental material or any inorganic compound except water in addition to the carbohydrate or derivative thereof.

(1) Note. See this class, subclass 162.1, (2) Note for the definition of an organic compound.

218 Coating or plastic compositions in the preparation of which a natural resin or derivative, e.g., rosin, copal, gamboge or ester gum, is employed.

(1) Note. For the purpose of this classification, crude products, e.g., pine tar, wood tar, wood pitch, which contain natural resins or reaction products thereof, are considered to be natural resins. Also included within the scope of natural resins are those compounds of known chemical structure containing the hydrophenanthrene nucleus which are derived from natural resins by treatment of the resin, per se.

SEE OR SEARCH THIS CLASS, SUBCLASS:
6, for polishes containing a natural resin.

SEE OR SEARCH CLASS:
260, Chemistry of Carbon Compounds, subclasses 97+ for natural resins or reaction products thereof.
520, Synthetic Resins or Natural Rubbers, Class 524, subclass 77, 187, 270+, and 764 for a natural resin or natural rubber or derivative nonreactant material in admixture with a synthetic resin; and Classes 525, 526, 527, and 528 for a natural resin or derivative containing synthetic resin, and see in particular Class 520, subclass 1 (Note 9, B) for an explanation of the type of polymer derived from a natural resin or derivative reactant which is proper for Class 520 as well as what is considered a natural resin or derivative for that Class.

219 This subclass is indented under subclass 218. Compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

220 This subclass is indented under subclass 219. Compositions in the preparation of which a fatty oil is employed.

(1) Note. Many of the patents in this subclass and indented subclasses are for varnishes.

221 This subclass is indented under subclass 220. Compositions in the preparation of which two or more kinds of fatty oil are employed.

(1) Note. The fatty oils may be from different sources, or may be different forms of the same oil, e.g., mixtures of linseed oil and cotton seed oil, castor oil and Turkey red oil.

222 This subclass is indented under subclass 220. Compositions in the preparation of which a drying oil is employed.

(1) Note. This subclass contains oils which are either drying or semi-drying, e.g., linseed oil or cotton seed oil.

(2) Note. The term “varnish” when broadly used is presumed to include a mixture of a natural resin and a drying oil, and patents drawn to compositions containing “varnish” recited broadly are classified on this basis, i.e., in this subclass or indented subclasses or in the appropriate subclass above.

223 This subclass is indented under subclass 222. Compositions in the preparation of which a sulfurizing or sulfonating agent is employed, including those compositions in the preparation of which sulfurized or sulfonated resin or oil is employed as such.

SEE OR SEARCH THIS CLASS, SUBCLASS:
233, 247 and 249, for other natural resin or fatty oil compositions including a sulfurizing or sulfonating agent.

224 This subclass is indented under subclass 222. Compositions in the preparation of which a wax is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

229, 230, 231, and 245, for other natural resin or fatty oil compositions in the preparation of which a wax is employed.

225 This subclass is indented under subclass 222. Compositions in the preparation of which a bituminous material or tarry residue is employed.

(1) Note. The bituminous material or "tarry residue" is employed in addition to the natural resin or derivative or crude products containing the same.

226 This subclass is indented under subclass 222. Compositions in the preparation of which a terpene or derivative, other than a natural resin, is employed.

227 This subclass is indented under subclass 222. Compositions in the preparation of which a hydrocarbon is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

226, for natural resin fatty oil compositions in which the hydrocarbon is a terpene, e.g., spirits of turpentine.

228 This subclass is indented under subclass 222. Compositions containing a filler, dye or pigment.

(1) Note. Patents wherein the filler, dye or pigment is claimed broadly as such are not placed in this subclass unless specific proportions or special treatments are claimed in connection therewith.

229 This subclass is indented under subclass 220. Compositions in the preparation of which a wax, bituminous material or tarry residue is employed.

(1) Note. See this class, subclasses 224 and 225.

(2) Note. The bituminous material or tarry residue is employed in addition to the natural resin or derivative or crude products containing the same.

230 This subclass is indented under subclass 218. Compositions in the preparation of which a wax is employed.

(1) Note. The wax employed may be either an ester type wax or a hydrocarbon wax, e.g., paraffin.

231 This subclass is indented under subclass 230. Compositions in the preparation of which an ester type wax, e.g., beeswax or carnauba, is employed.

232 This subclass is indented under subclass 218. Compositions in the preparation of which a bituminous material or tarry residue is employed.

(1) Note. The bituminous material and "tarry residue" is employed in addition to the natural resin or derivative or crude products containing the same.

233 This subclass is indented under subclass 232. Compositions in the preparation of which a sulfurizing or sulfonating agent is employed, including those compositions in which a sulfurized or sulfonated natural resin or bituminous material is employed as such.

SEE OR SEARCH THIS CLASS, SUBCLASS:

247, 274 and 275, for other bituminous compositions in the preparation of which a sulfurizing or sulfonating agent is employed.

234 This subclass is indented under subclass 232. Compositions in the preparation of which a hydrocarbon (other than the bituminous material or tarry residue) is employed.

235 This subclass is indented under subclass 232. Compositions containing a filler, dye or pigment.

(1) Note. Patents wherein the filler, dye, or pigment is claimed broadly as such are

not placed in this subclass unless specific proportions or special treatments are claimed in connection therewith.

SEE OR SEARCH THIS CLASS, SUBCLASS:

241, 242 and 281, and indented subclasses, for other natural resin or derivative or bituminous compositions containing a filler, dye or pigment.

236 This subclass is indented under subclass 218. Compositions which are normally liquid and contain a definite solvent or dispersing medium.

(1) Note. Patents wherein the solvent or dispersing medium is merely claimed broadly are not classified in this subclass or indented subclasses, unless specific proportions or special treatments are claimed in connection with the solvent or dispersing medium.

237 This subclass is indented under subclass 236. Compositions containing an alcohol.

238 This subclass is indented under subclass 236. Compositions containing water.

239 This subclass is indented under subclass 236. Compositions containing a hydrocarbon.

240 This subclass is indented under subclass 218. Compositions containing a definite flux, softener or plasticizer.

(1) Note. Patents wherein the flux, softener or plasticizer is claimed broadly as such are not placed here unless specific proportions or some special treatments are claimed in connection therewith.

241 This subclass is indented under subclass 218. Compositions containing a definite filler, dye or pigment.

(1) Note. Where the filler, dye or pigment is claimed broadly as such, the patent is not classified in this subclass unless specific proportions or special treatments are claimed in connection with these ingredients.

242 This subclass is indented under subclass 241. Compositions containing a fibrous filler, e.g., asbestos.

SEE OR SEARCH THIS CLASS, SUBCLASS:

156, for natural resin compositions containing proteinaceous fibers, e.g., hair or leather fiber; and subclass 200 for natural resin compositions containing cellulose fibers, e.g., cork or cotton.

243 Coating or plastic compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

SEE OR SEARCH CLASS:

520, Synthetic Resins or Natural Rubbers, Class 523, subclass 455 and 511 and Class 524, subclasses 284+ for a fat, fatty oil, dimer or trimer of a fatty acid as a nonreactant material in admixture with a synthetic resin or natural rubber; and Classes 525, 526, 527, and 528 for a fat, fatty oil, dimer or trimer containing synthetic resin and see in particular Class 520, subclass 1 (Note 9, A) for an explanation of the type of polymers derived from said materials which are proper for Class 520.

554, Organic Compounds, subclass 1 and definition thereof, for the definition of “fats”, “fatty oil” and “higher fatty acid”.

244 This subclass is indented under subclass 243. Compositions in the preparation of which a fatty oil is employed.

(1) Note. Many of the patents in this subclass and indented subclasses are for paints.

245 This subclass is indented under subclass 244. Compositions in the preparation of which wax is employed.

246 This subclass is indented under subclass 244. Compositions in the preparation of which a bituminous material or tarry residue is employed.

247 This subclass is indented under subclass 246. Compositions in the preparation of which a sulfurizing or sulfonating agent is employed including those compositions in which a sulfurized or sulfonated fatty oil or bituminous material or tarry residue is employed, per se.

(1) Note. See this class, subclasses 249, 274, and 275.

248 This subclass is indented under subclass 246. Compositions containing a filler, dye or pigment.

(1) Note. Patents wherein the filler, dye or pigment is claimed broadly as such are not placed in this subclass unless specific proportions or special treatments are claimed in connection therewith.

SEE OR SEARCH THIS CLASS, SUBCLASS:

251, 253 and indented subclasses 266 and 281 and indented subclasses for other fatty oil or bituminous compositions containing a filler, dye or pigment.

249 This subclass is indented under subclass 244. Compositions in the preparation of which a sulfurizing or sulfonating agent is employed including those compositions in which a sulfurized or sulfonated oil is employed as such.

SEE OR SEARCH THIS CLASS, SUBCLASS:

223, and 247, for other fatty oil compositions with sulfurizing or sulfonating agents.

SEE OR SEARCH CLASS:

554, Organic Compounds, subclass 33 and 85 and indented subclasses, for sulfur containing fatty oils, per se.

250 This subclass is indented under subclass 244. Compositions in the preparation of which two or more kinds of fatty oil are employed.

(1) Note. The fatty oils may be from different sources, or may be different forms of the same oil, e.g., mixtures of linseed oil and cotton seed oil; linseed oil and chlorinated linseed oil.

251 This subclass is indented under subclass 250. Compositions containing a pigment or filler.

(1) Note. Patents wherein the pigment or filler is claimed broadly as such are not placed in this subclass unless specific proportions or special treatments are claimed in connection therewith.

SEE OR SEARCH THIS CLASS, SUBCLASS:

228, 248, 253+, and 266, for other fatty oil compositions containing a filler dye or pigment.

252 This subclass is indented under subclass 244. Compositions in the preparation of which a drying oil is employed.

(1) Note. This subclass and indented subclasses include oils which are either drying or semi-drying, e.g., linseed oil or cotton seed oil.

253 This subclass is indented under subclass 252. Compositions containing a filler, dye or pigment.

(1) Note. Patents wherein the pigment or filler is claimed broadly as such are not placed in this subclass or indented subclasses unless specific proportions or special treatments are claimed in connection therewith.

SEE OR SEARCH THIS CLASS, SUBCLASS:

228, 248, 251, and 266, for other fatty oil compositions containing a filler, dye or pigment.

288, especially subclass 308 for pigments, per se, and for pigments containing an oil or soap as an ingredient thereof.

254 This subclass is indented under subclass 253. Compositions containing zinc compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:

292+, and Notes thereto, for pigments, per se, including a zinc compound.

255 This subclass is indented under subclass 254. Compositions containing lithopone, a composite pigment, containing zinc sulfide and barium sulfate, usually formed by double decomposition.

SEE OR SEARCH THIS CLASS, SUBCLASS:
294, and 295, for lithopone pigments or fillers, per se.

256 This subclass is indented under subclass 253. Compositions containing a lead compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
297, and 298, for pigments or fillers containing a lead compound.

257 This subclass is indented under subclass 256. Compositions containing white lead, i.e., basic lead carbonate.

258 This subclass is indented under subclass 256. Compositions containing red lead, i.e., lead tetroxide.

259 This subclass is indented under subclass 253. Compositions containing an iron compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
304, for pigments or fillers containing an iron compound.

260 This subclass is indented under subclass 253. Compositions containing a calcium compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
306, for pigments or fillers containing a calcium compound.

261 This subclass is indented under subclass 253. Compositions containing carbon in an elemental form.

SEE OR SEARCH THIS CLASS, SUBCLASS:
472+, for pigments or fillers containing elemental carbon.

262 This subclass is indented under subclass 253. Processes drawn to some specific treatment of the pigment.

(1) Note. Many of the patents in this subclass are for processes of transferring a pigment from an aqueous medium into an oil medium.

263 This subclass is indented under subclass 252. Compositions containing an agent for preserving or stabilizing the composition, e.g., anti-oxidant.

SEE OR SEARCH CLASS:
252, Compositions, subclasses 380+ for anti-oxidants or other preserving agents. For compositions, each of which contains a substance and an agent for inhibiting caking of granules of, corrosion by, or chemical change of the substance, search where the substance is classifiable.

264 This subclass is indented under subclass 252. Compositions containing an agent which accelerates the drying of the drying oil.

(1) Note. Patents wherein the drier is claimed broadly as such are not placed in this subclass unless specific proportions or special treatments are claimed in connection therewith.

SEE OR SEARCH THIS CLASS, SUBCLASS:
310, for driers, per se.

265 This subclass is indented under subclass 252. Compositions in the preparation of which a hydrocarbon is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:
245, for the use of hydrocarbon wax in the preparation of drying oil compositions.

266 This subclass is indented under subclass 244. Compositions containing a pigment or filler.

(1) Note. Patents wherein the pigment or filler is claimed broadly as such are not

placed in this subclass unless specific proportions or special treatments are claimed in connection therewith.

SEE OR SEARCH THIS CLASS, SUBCLASS:

228, 248, 251, and 253+, for other fatty oil compositions containing a filler, dye or pigment.

288+, especially subclass 308 for pigments, per se, and for pigments containing an oil or soap as an ingredient thereof.

267 This subclass is indented under subclass 244. Compositions in the preparation of which a hydrocarbon is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

245, for the use of a hydrocarbon wax in the preparation of fatty oil compositions.

268 This subclass is indented under subclass 243. Compositions in the preparation of which a wax is employed. The wax may be either a hydrocarbon type wax or ester type wax.

269 This subclass is indented under subclass 243. Compositions in the preparation of which a bituminous material or tarry residue is employed.

270 Coating or plastic compositions in the preparation of which a wax is employed. Compositions in the subclass and indented subclasses may include either an ester type wax, e.g., beeswax, or a hydrocarbon wax, e.g., paraffin.

(1) Note. Paraffin wax admixed with a preservative is classified herein in the absence of ingredients classified above, unless the preservative is a mineral oil in which case see Class 208, Mineral Oils: Processes and Products, subclass 21.

SEE OR SEARCH CLASS:

208, Mineral Oils: Processes and Products, subclasses 24+ for the treatment of paraffin or the recovery of the same from mineral oils.

520, Synthetic Resins or Natural Rubbers, Class 523, subclass 465 and 520, and Class 524, subclasses 275+ and 474+ for a wax nonreactant material in admixture with a synthetic resin or natural rubber.

554, Organic Compounds, particularly subclass 1 for ester type wax, per se.

271 This subclass is indented under subclass 270. Compositions which are normally liquid and contain a definite solvent or dispersing medium.

(1) Note. Patents wherein the solvent or dispersing medium is claimed broadly are not placed in this subclass, unless specific proportions or special treatments are claimed in connection therewith.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, appropriate subclasses for colloid systems or agents for such systems or making or stabilizing such systems or agents, especially subclasses 20+ for primarily organic continuous liquid phase colloid system (e.g., water-in-oil emulsion, dispersion of paraffin wax), subclasses 38+ for bituminous material, coal, or Carbon dispersed in a continuous aqueous phase colloid system (e.g., asphalt, pitch, tar, paraffin wax), subclasses 77+ for colloid systems of colloid-sized solid phase dispersed in aqueous continuous liquid phase (e.g., synthetic ester-wax dispersion); in each case, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art; and in the case when otherwise provided for in Class 106, when containing no material other than that to produce or stabilize the dispersion, i.e., free of dyes, pigments, other art perfecting ingredients.

272 This subclass is indented under subclass 270. Compositions containing a definite filler, dye or pigment.

(1) Note. Where the filler, dye or pigment is merely claimed broadly, the patent is not

classified in this subclass unless specific proportions or special treatments are claimed in connection with these ingredients.

273.1 Bituminous material or tarry residue: Coating or plastic compositions in the preparation of which a bituminous material or tarry residue is employed.

(1) Note. See Class 404, Road Structure, Process, or Apparatus, appropriate subclasses for the combination of a Class 106 composition (or process) with structure (or steps) peculiar to road building. See note to Class 106, under class definition of Class 404.

(2) Note. See Class 208, Mineral Oils: Processes and Products, subclasses 4+ for preparation of oxidized asphalts and the resulting products, subclasses 22+ for asphalts, tars or pitches, per se, or in admixture with each other, and subclasses 39+ for the preparation, treatment or recovery of asphalts, tars and pitches.

(3) Note. See Class 366, Agitating, subclasses 3+ for physical processes of mixing asphaltic mortars which are clearly distinct from the composition.

(4) Note. See Class 520, Synthetic Resins or Natural Rubbers, Class 523, subclasses 450 and 518, and Class 524, subclasses 59+ and 705 for a nonreactant coal or bituminous material admixed with a synthetic resin; or natural rubber and Classes 525, 526, 527, and 528 for a coal or bituminous containing synthetic resin, and see in particular Class 520, subclass 1 for an explanation of the type of polymer derived from coal or bituminous material which is proper for Class 520.

274 This subclass is indented under subclass 273. Compositions in the preparation of which a sulfurizing or sulfonating agent is employed, including those compositions in which a sulfurized or sulfonated bituminous material or tarry residue is employed, per se.

(1) Note. See this class, subclasses 233 and 247.

275 This subclass is indented under subclass 274. Compositions containing a definite filler, dye or pigment.

(1) Note. Where the filler, dye or pigment is merely claimed broadly, the patent is not classified in this subclass unless specific proportions or special treatments are claimed in connection with these ingredients.

SEE OR SEARCH THIS CLASS, SUBCLASS:

280, and 281, for other bituminous compositions including a filler, dye or pigment.

276 This subclass is indented under subclass 273. Compositions in the preparation of which rock asphalt is employed.

277 This subclass is indented under subclass 273. Compositions in the preparation of which bituminous emulsion is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

278, for other bituminous compositions containing a solvent or dispersing medium.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, appropriate subclasses for colloid systems or agents for such systems or making or stabilizing such systems or agents, especially subclasses 20+ for primarily organic continuous liquid phase colloid system (e.g., water-in-oil emulsion, dispersion of paraffin wax), subclasses 38+ for bituminous material, coal, or Carbon dispersed in a continuous aqueous phase colloid system (e.g., asphalt, pitch, tar, paraffin wax), subclasses 77+ for colloid systems of colloid-sized solid phase dispersed in aqueous continuous liquid phase (e.g., syn-

thetic ester-wax dispersion); in each case, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art; and in the case when otherwise provided for in Class 106, when containing no material other than that to produce or stabilize the dispersion (i.e., Class 516 takes all bituminous emulsions, even though claimed as coating or plastic compositions, when they include nothing more than is necessary to form or stabilize the emulsion).

278 This subclass is indented under subclass 273. Compositions which are normally liquid and contain a definite solvent or dispersing medium.

(1) Note. Patents wherein the solvent or dispersing medium is merely claimed broadly are not placed in this subclass, unless specific proportions or special treatments are claimed in connection therewith.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, appropriate subclasses for colloid systems or agents for such systems or making or stabilizing such systems or agents, especially subclasses 20+ for primarily organic continuous liquid phase colloid system (e.g., water-in-oil emulsion, dispersion of paraffin wax), subclasses 38+ for bituminous material, coal, or Carbon dispersed in a continuous aqueous phase colloid system (e.g., asphalt, pitch, tar, paraffin wax), subclasses 77+ for colloid systems of colloid-sized solid phase dispersed in aqueous continuous liquid phase (e.g., synthetic ester-wax dispersion); in each case, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art; and in the case when otherwise provided for in Class 106, when containing no material other than that to produce or stabilize the dispersion (i.e., Class 516 takes all bituminous emulsions, even though claimed as coating or plastic compositions, when they include nothing more than is necessary to form or stabilize the emulsion).

279 This subclass is indented under subclass 273. Compositions containing a definite flux or plasticizer.

(1) Note. Patents wherein the flux or plasticizer is claimed broadly as such are not classified in this subclass unless specific proportions or special treatments are claimed in connection therewith.

280 This subclass is indented under subclass 279. Compositions containing a definite filler, dye or pigment.

(1) Note. Where the filler, dye or pigment is merely broadly claimed, the patent is not classified in this subclass unless specific proportions or special treatments are claimed in connection with these ingredients.

SEE OR SEARCH THIS CLASS, SUBCLASS:

275, and 281+, for other bituminous compositions containing a filler, dye or pigment.

281.1 With filler, dye or pigment:

This subclass is indented under subclass 273. Compositions containing a definite filler, dye or pigment.

(1) Note. Where the filler, dye, or pigment is merely claimed broadly as such, the patent is not placed in this subclass unless specific proportions or special treatments are claimed in connection with these ingredients.

(2) Note. See this class, subclasses 275 and 280 for other bituminous compositions containing a filler, dye or pigment.

282 This subclass is indented under subclass 281. Compositions containing a fibrous filler.

SEE OR SEARCH THIS CLASS, SUBCLASS:

156, for bituminous compositions containing a proteinaceous fiber, e.g., hair or leather; subclass 202 for bituminous compositions containing a cellulosic fiber, e.g., cotton or sawdust.

283 This subclass is indented under subclass 281. Compositions in the preparation of which water is employed. The water may be employed as such or in the form of steam, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

277, for compositions in the preparation of which a bituminous emulsion is employed.

284 This subclass is indented under subclass 281. Compositions in the preparation of which coal tar pitch is employed.

284.01 Specified particle or screen-mesh size stated:
This subclass is indented under subclass 281.1. Composition containing particles of a claimed specified size or which pass through a specifically sized mesh screen.

284.02 Heavy metal or aluminum containing:
This subclass is indented under subclass 281.1. Composition containing a heavy metal or aluminum atom.

284.03 Alkali or alkaline earth metal containing:
This subclass is indented under subclass 281.1. Composition containing an alkali or alkaline earth metal atom.

284.04 Lime, limestone or chalk containing:
This subclass is indented under subclass 284.03. Composition which contains lime (CaO), limestone or chalk ($CaCO_3$).

284.05 Elemental carbon containing:
This subclass is indented under subclass 281.1. Composition containing elemental carbon.

284.06 Nitrogen containing:
This subclass is indented under subclass 281.1. Composition which contains nitrogen.

284.1 Phosphorus containing:
This subclass is indented under subclass 273.1. Composition containing phosphorus.

284.2 Halogen containing:
This subclass is indented under subclass 273.1. Composition containing halogen.

284.3 Metal containing:
This subclass is indented under subclass 273.1. Composition containing a metal.

284.4 Nitrogen containing:
This subclass is indented under subclass 273.1. Composition containing nitrogen.

285 Coating or plastic compositions in the preparation of which a hydrocarbon is employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

270+, for compositions in the preparation of which a hydrocarbon wax is employed.

SEE OR SEARCH CLASS:

44, Fuel and Related Compositions, subclasses 300+ for a liquid fuel containing a hydrocarbon and a nonhydrocarbon.

208, Mineral Oils: Processes and Products, subclasses 14+ for compositions containing mineral oils only; and subclass 1 for mineral oils which have drying properties (i.e., synthetic drying oils).

260, Chemistry of Carbon Compounds, subclasses 2.01+, and its daughter classes, Class 520+, Synthetic Resins, for synthetic resin compositions containing a hydrocarbon; and subclasses 719 and 759 of Class 260 for rubber compositions.

508, Solid Antifriction Devices, Materials Therefor, Lubricant or Separant Compositions for Moving Solid Surfaces, and Miscellaneous Mineral oil Compositions, subclasses 110+, for a lubricant containing a hydrocarbon and a nonhydrocarbon or a solid polymeric hydrocarbon and for a heavy mineral oil composition of unspecified use containing a nonhydrocarbon or a solid polymeric hydrocarbon.

585, Chemistry of Hydrocarbon Compounds, subclasses 1+ for a composition containing only hydrocarbons; and subclass 945 for processes which result in a hydrocarbon drying oil.

286.1 Inorganic materials only containing at least one metal atom:
This subclass is indented under the class definition. Coating or plastic compositions which contain only inorganic materials, at least one of said materials contains a metal atom.

286.2 Containing two or more diverse metal atoms in a single compound:
This subclass is indented under subclass 286.1. Compositions which contain at least two diverse metal atoms in a single compound, e.g., metal metallate and double salt, etc.

(1) Note. For purposes of this subclass, glass, clay, asbestos, mica, and alloys are not considered as having at least two metal atoms in a single compound and are therefore excluded herefrom.

SEE OR SEARCH THIS CLASS, SUBCLASS:
286.4, for a glass containing coating or plastic composition.
286.5, for a clay (kaolin, bentonite, montmorillonite, etc.) or mica containing coating or plastic composition.
286.6, for an asbestos containing coating or plastic composition.

286.3 Fe or Co containing:
This subclass is indented under subclass 286.1. Compositions which contain an iron or cobalt atom.

286.4 Group IV metal atom (Ti, Zr, Hf, Ge, Sn, or Pb) containing:
This subclass is indented under subclass 286.1. Compositions which contain a Group IV metal atom, i.e., Ti, Zr, Hf, Ge, Sn, or Pb.

(1) Note. Thorium for the purpose of this subclass is excluded herefrom.

(2) Note. Glass, per se, is considered as being lead containing unless the disclosure is devoid of teaching lead in a glass composition.

286.5 Aluminum containing:
This subclass is indented under subclass 286.1. Compositions which contain aluminum.

(1) Note. Clay is a generic term and properly includes, but is not limited to, kaolin, bentonite, montmorillonite, etc.

286.6 Group II metal atom (Be, Mg, Sr, Ca, Ba, Ra, Zn, Cd, or Hg) containing:
This subclass is indented under subclass 286.1. Compositions which contain a Group II metal atom, i.e., Be, Mg, Sr, Ca, Ba, Ra, Zn, Cd, or Hg.

(1) Note. Asbestos is properly classified herein.

286.7 Group I Metal Atom (Li, Na, K, Rb, Cs, Fr, Cu, Ag, or Au) containing:
This subclass is indented under subclass 286.1. Compositions which contain a Group I metal atom, i.e., Li, Na, K, Rb, Cs, Fr, Cu, Ag, or Au.

SEE OR SEARCH THIS CLASS, SUBCLASS:
286.4, for a glass containing coating or plastic composition.

286.8 Inorganic materials only:
This subclass is indented under the class definition. Coating or plastic compositions which contain inorganic materials only.

(1) Note. This subclass includes mixtures of compounds or elements containing nonmetal atoms.

287.1 Silicon containing other than solely as SiO_2 or as part of an aluminum-containing compound:
This subclass is indented under the class definition. Coating or plastic compositions which contain a silicon atom other than in a compound of aluminum or as SiO_2, per se.

SEE OR SEARCH THIS CLASS, SUBCLASS:
287.13, for a composition containing “a silicone” or “silicone oil” otherwise unidentified.

287.17, for an aluminum-containing compound containing a silicon atom.
287.34, for a coating composition containing a silicon atom solely as SiO_2 containing compositions.

287.11 N-containing Si compound:
This subclass is indented under subclass 287.1. Coating or plastic compositions wherein the compound which contains the silicon atom also contains a nitrogen atom.

SEE OR SEARCH THIS CLASS, SUBCLASS:
287.25, for compositions with nitrogen-containing compounds which also contain the carbonyl group.
287.3, for compositions containing a nitrogen-containing compound.

287.12 -OH bonded directly to Si atom:
This subclass is indented under subclass 287.1. Coating or plastic compositions wherein an -OH group is directly bonded to a silicon atom.

287.13 C bonded directly to Si atom:
This subclass is indented under subclass 287.1. Coating or plastic compositions which contain silicon bonded directly to carbon.

(1) Note. When a substituent is claimed as a monovalent radical and is otherwise unidentifiable, placement is proper in subclass 287.13.

(2) Note. A composition containing “a silicone” or “silicone oil” otherwise unidentifiable is classified here.

287.14 H or alkyl directly bonded to Si:
This subclass is indented under subclass 287.13. Coating or plastic compositions in which the silicon atom is directly attached to a hydrogen atom or alkyl group.

287.15 C radical bonded to Si is unsaturated:
This subclass is indented under subclass 287.13. Coating or plastic compositions wherein the organic radical attached to the silicon atom has at least one ethylenically unsaturated bond.

287.16 Si-O-C bonded compound:
This subclass is indented under subclass 287.1. Coating or plastic compositions which contain a compound having a Si-O-C- linkage.

287.17 Aluminum compound containing:
This subclass is indented under the class definition. Coating or plastic compositions containing an aluminum compound.

(1) Note. This subclass includes clays.

287.18 Heavy metal compound containing:
This subclass is indented under the class definition. Coating or plastic compositions which contain compounds of metals with a specific gravity greater than 4.

(1) Note. Heavy metal as used here includes arsenic and antimony.

287.19 Group IVA or IVB (Ti, Zr, Hf, Ge, Sn, Pb):
This subclass is indented under subclass 287.18. Coating or plastic compositions which contain a compound of titanium, zirconium, hafnium, germanium, tin, or lead.

287.2 Heterocyclic (only N, O, S, Se, Te):
This subclass is indented under the class definition. Coating or plastic compositions which contain a ring whose members are composed solely of at least one carbon and one or more atoms of the elements nitrogen, oxygen, sulfur, selenium, and tellurium.

287.21 Two hetero ring atoms:
This subclass is indented under subclass 287.2. Coating or plastic compositions wherein a compound contains at least two hetero ring atoms.

(1) Note. The hetero atoms do not have to be diverse.

287.22 Epoxy ring containing:
This subclass is indented under subclass 287.2. Coating or plastic compositions wherein a compound contains an oxirane ring.

287.23 O-containing organic compound:
This subclass is indented under the class definition. Coating or plastic compositions which contain an oxygen-containing organic compound.

287.24 Carbonyl group containing:
This subclass is indented under subclass 287.23. Coating or plastic compositions which contains a carbonyl radical, i.e., -C=O.

(1) Note. In the absence of a clear showing to the contrary a compound claimed as a "drying oil" is classifiable herein.

287.25 N containing:
This subclass is indented under subclass 287.24. Coating or plastic compositions in which the compound containing the carbonyl radical also contains a nitrogen atom.

287.26 Hydroxy group containing or alcoholate:
This subclass is indented under subclass 287.23. Coating or plastic compositions which contains an C-OH group or is an alcoholate thereof.

287.27 Halogen containing:
This subclass is indented under the class definition. Coating or plastic compositions which contain elemental fluorine, chlorine, bromine, iodine, or astatine or compounds thereof.

287.28 Organic halide:
This subclass is indented under subclass 287.27. Coating or plastic compositions in which the molecule containing a halogen atom is organic in nature.

287.29 Phosphorus or nitrogen containing:
This subclass is indented under the class definition. Coating or plastic compositions which contain phosphorus or nitrogen or a compound thereof.

287.3 Nitrogen containing:
This subclass is indented under subclass 287.29. Coating or plastic compositions which contain nitrogen or a compound thereof.

287.32 Sulfur containing:
This subclass is indented under the class definition. Coating or plastic compositions which contain sulfur or a compound thereof.

287.34 Silicon dioxide containing:
This subclass is indented under the class definition. Coating or plastic compositions which contain SiO_2, per se.

(1) Note. This includes colloidal silicon and silica aerogel.

287.35 Miscellaneous:
This subclass is indented under the class definition. Coating or plastic compositions not otherwise provided for.

310 Materials or ingredients specialized for use to accelerate the rate of drying of coating or plastic compositions. These materials are usually intended for use with fatty oil compositions, e.g., paints, varnishes, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
264, for drying oil compositions containing a drier.

SEE OR SEARCH CLASS:
554, Organic Compounds, subclasses 71 through 76 for salts of fatty oil acids which are useful as driers.

311 Materials or ingredients specially designed for use as a solvent or vehicle to be used in the production of coating or plastic compositions.

SEE OR SEARCH THIS CLASS, SUBCLASS:
244, and indented subclasses and 285 for vehicles including a fatty oil or a hydrocarbon.

SEE OR SEARCH CLASS:
252, Compositions, subclass 364, for other solvents.

312 Materials or ingredients specially designed for use in producing opacity in glass, usually in the form of vitreous enamels or glazes.

SEE OR SEARCH THIS CLASS, SUBCLASS:

48, and 49, for enamels or glazes including an opacifier, and subclasses 299 and 300, for titanium or zirconium containing pigments or fillers.

SEE OR SEARCH CLASS:

520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 523, subclass 170 for a composition containing a synthetic resin or natural rubber, having utility as an enamel for a glass substrate or as a medium or binder in the preparation of glass enamel or to processes of preparing said composition.

313 Materials or ingredients specially designed for use as ceramic fluxes which, when mixed with a ceramic composition, reduce the melting or softening temperature of the same.

SEE OR SEARCH THIS CLASS, SUBCLASS:

39, and indented subclasses, for ceramic compositions including a flux.

SEE OR SEARCH CLASS:

75, Specialized Metallurgical Processes, Compositions for Use Therein, Consolidated Metal Powder Compositions, and Loose Metal Particulate Mixtures, subclasses 303+ for flux compositions for use with molten metals.

316 Materials or ingredients not otherwise provided for.

SEE OR SEARCH CLASS:

260, Chemistry of Carbon Compounds, and 423, Chemistry of Inorganic Compounds, for materials or ingredients of coating or plastic compositions which are single compounds or are reaction mixtures.

400 Pigment, filler, or aggregate compositions (e.g., stone, shale, pebbles, rock, etc.):
Materials or ingredients specialized for use as pigments, fillers, or aggregates in coating or plastic compositions.

(1) Note. This class and indented subclasses include all pigments, fillers or aggregates which are specialized for use in producing coating or plastic compositions whether or not the said coating or plastic compositions are classified in this class, e.g., synthetic resins, rubber, paper fillers, etc.

(2) Note. When a composition contains no "identified material" other than a material such as rock, stone, etc., which may have varied compositions in the art, it is placed in this subclass, unless the stone or rock is specifically defined by the patent. See the definition of "identified material" in the definitions (1) Note, of subclass 401 of this class.

SEE OR SEARCH CLASS:

241, Solid Material Comminution or Disintegration, appropriate subclasses for processes of producing pigments, involving comminution.

260, Chemistry of Carbon Compounds, appropriate subclasses for pigments, fillers or aggregates which are single compounds or are reaction mixtures.

423, Chemistry of Inorganic Compounds, appropriate subclasses for pigments, fillers or aggregates which are single compounds or are reaction mixtures.

428, Stock Material or Miscellaneous Articles, appropriate subclasses for a stock material product of that class including elements of structure (e.g., crimped fibers) and especially subclass 364 for a rod, strand or fiber with structure (e.g., varying cross-section, physical dimension, etc.) or with a coating.

520, Synthetic Resins or Natural Rubbers, appropriate subclasses particularly Class 524, for a pigment, filler or aggregate composition, otherwise proper for Class 106, subclasses 400+ when the composition contains a synthetic resin or rubber.

401 Composition contains identified material other than water:

This subclass is indented under subclass 400. Subject matter wherein the composition contains material, other than water, which meets the definition of identified material for these subclasses.

(1) Note. For the purposes of subclasses 401-506 of this class "Identified material" is defined to mean: material wherein at least one chemical atom is identified, e.g., amine, hydrocarbon, alcohol, ether, etc. Identified material is material wherein at least one of the chemical atoms can be deduced with certainty. For purposes of these subclasses, organic material although inherently reciting the presence of a carbon atom is considered to be too broad. An exemplary list of materials to be regarded as identified material is as follows: metal hydrate, chalcogen, carboxylic acid, peroxy, peroxide, alkali or alkaline earth metal, halogen, sulfide, oil, fat, fatty acid or ester, etc. Identified material is by no means limited to the above noted examples. The list below is not exhaustive and merely enumerates certain materials that will not be considered as identified material, e.g., organic compound, metal containing, inorganic compound, organometallic, solvent, pigment, aggregate, filler, hydrophobic, hydrophillic, plasticizer, preservative, antioxidant, stabilizer, lubricant, fibrous, particulate, liquid, solid gas, dispersant, emulsifier, surfactant, surface active agent, crystalline, plastic, fluorescent, phosphorescent, luminescent, deliquescent, drier, humectant, blue color, numerically described without providing a chemical atom, Lewis acid or base, mineral, organic solvent, co-solvent, free radical, amphoteric, anionic, cationic, ionic, dielectric, conductor, insulator, etc.

(2) Note. While water fits the intent of what one would consider an identified material under this definition, water is positively excluded from subclasses 401+ as not sufficient by itself to place a composition in these subclasses.

(3) Note. For subclass indents, the same requirement for identified material obtains, e.g., a composition containing organic solvent and a phthalocyanine would not be sufficient to bring a composition into subclass 413, etc.

(4) Note. Special terms used in the subclass titles, whether meeting the definition of identified material or not, are considered sufficient to bring a composition into the subclass, e.g., cork, fly ash, organic refuse, mica, etc.

402 Lake containing:

This subclass is indented under subclass 401. Pigments which contain carbon compound dyes absorbed in or absorbed on particles of salts, inorganic hydroxides or other compounds, e.g., aluminum hydroxide, barium sulfate, etc.

(1) Note. See Class 260, Chemistry of Carbon Compounds, appropriate subclasses for compositions which contain definite chemical compounds of dyestuff or organic pigment compounds with metals. Carbon coloring compounds which are produced in the presence of a preformed substratum, wherein novelty is alleged to reside in the combination or in the amount, form, or nature of the substratum, are in this class (106); however, where the substratum is synthesized simultaneously with the carbon compound, the product belongs in Class 260.

403 Elemental metal or alloy containing:

This subclass is indented under subclass 401. Subject matter wherein the composition contains an elemental metal or alloy.

SEE OR SEARCH CLASS:

75, Specialized Metallurgical Processes, Compositions for Use Therein, Consolidated Metal Powder Compositions, and Loose Metal Particulate Mixtures, subclasses 228+ for a composition having a continuous phase of free metal made by consolidating metal particles, and subclasses 251+ for a loose metal particle composition.

241, Solid Material Comminution or Disintegration, appropriate subclasses for methods and means for making metal particles mechanically.

428, Stock Material or Miscellaneous Articles, subclasses 546+ for metallic stock material having metal particles which may be made, for example, by coating a composition containing metal particles on a nonparticulate metal substrate.

404 Aluminum containing:
This subclass is indented under subclass 403. Subject matter wherein the composition contains aluminum.

405 Fly ash, coal ash or bottom ash or derived therefrom:
This subclass is indented under subclass 401. Subject matter wherein the composition contains fly ash, bottom ash or coal ash or contains a material whose source is indicated to be such ash material.

406 Cork, bark, vegetable shell, hull or cob, or material derived therefrom:
This subclass is indented under subclass 401. Subject matter wherein the composition contains cork, bark, vegetable shell, hull or cob, or contains material whose source was one of these materials.

407 Organic refuse or waste material containing or derived therefrom:
This subclass is indented under subclass 401. Subject matter wherein the composition contains material identified as waste or refuse material or as having been derived from such a source, however, waste polymer material, e.g., used to produce carbon black, etc., is excluded from this subclass.

408 Alkali blue pigment containing:
This subclass is indented under subclass 401. Subject matter wherein the composition contains an Alkali blue pigment.

(1) Note. Alkali blue pigment is considered to be a pigment having an arylpararosaniline sulfonic acid type formula.

409 Hollow, porous or foam particle containing:
This subclass is indented under subclass 401. Subject matter wherein at least some of the particles in the composition are hollow or porous or are particles of foam material.

SEE OR SEARCH CLASS:

501, Compositions: Ceramic, subclasses 80+ for the production of porous materials from ceramic compositions.

410 Phthalocyanine or derivative containing:
This subclass is indented under subclass 401. Subject matter wherein the composition contains a phthalocyanine or derivative.

411 Mixed phthalocyanines or derivatives:
This subclass is indented under subclass 410. Subject matter wherein the composition contains more than one phthalocyanine or derivative compound.

412 Special process of milling, grinding, comminuting, plural stage or zone mixing or product:
This subclass is indented under subclass 410. Subject matter wherein there is recited a specific method of milling, grinding, or comminuting or multiple stages or zones are recited in a mixing process or product thereof.

(1) Note. Mere recitation of milling, grinding, comminuting, or mixing is not sufficient to place a patent in this subclass, but specific parameters of operation must be recited.

413 With organic compound:
This subclass is indented under subclass 410. Subject matter wherein the composition contains an additional organic compound other than phthalocyanine or derivative.

414 Ultramarines, e.g., ultramarine green, etc.:
This subclass is indented under subclass 401. Subject matter wherein the composition contains ultramarine, a complex blue pigment made up of sodium polysulfides with sodium and aluminum silicates, e.g., ultramarine green, etc.

415 Mica, shell, scale, platelet, or lamellate:
This subclass is indented under subclass 401. Subject matter wherein the composition contains shell, scales, platelets, micaceous material or similar lamellate materials.

SEE OR SEARCH CLASS:
241, Solid Material Comminution or Disintegration, subclass 4, and the notes thereto, for processes of comminuting mica and the like.

416 Clay containing or derived therefrom:
This subclass is indented under subclass 415. Subject matter wherein the composition contains clay.

417 Mica containing:
This subclass is indented under subclass 415. Subject matter wherein the composition contains mica.

(1) Note. Mica is generally defined as a group of silicates characterized physically as flat, six-sided monoclinic crystals, all of which contain hydroxy, an aluminum silicate, and an alkali. Included within the term mica are biotite, muscovite, phlogopite, zinnwaldite, isinglass, and muscovy glass.

418 Iron or bismuth compound containing (Fe or Bi):
This subclass is indented under subclass 417. Subject matter wherein the composition contains a compound of iron or bismuth.

419 Zinc compound containing (Zn):
This subclass is indented under subclass 401. Subject matter wherein the composition contains a zinc compound.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, appropriate subclasses for zinc compounds, per se.

420 Zinc sulfide containing:
This subclass is indented under subclass 419. Subject matter wherein the composition contains zinc sulfide.

421 Lithopone (zinc sulfide + barium sulfate):
This subclass is indented under subclass 420. Subject matter wherein the composition contains lithopone, a composite pigment containing zinc sulfide and barium sulfate, usually formed by double decomposition.

422 Metal compound other than barium or zinc containing:
This subclass is indented under subclass 421. Subject matter wherein the composition contains a metal compound other than a zinc or barium compound.

423 Subsequent treatment or product thereof:
This subclass is indented under subclass 421. Subject matter wherein the lithopone composition is further treated, e.g., to purify, etc., or product thereof.

424 Calcium compound containing:
This subclass is indented under subclass 420. Subject matter wherein the composition also contains a calcium compound.

425 Zinc oxide containing:
This subclass is indented under subclass 419. Subject matter wherein the composition contains zinc oxide.

(1) Note. See Class 423, Chemistry of Inorganic Compounds, appropriate subclasses for zinc oxide, per se.

426 Aluminum compound or silicon containing, e.g., clay, etc.:
This subclass is indented under subclass 425. Subject matter wherein the composition contains silicon or an aluminum compound.

427 Sulfur or phosphorus containing:
This subclass is indented under subclass 425. Subject matter wherein the composition contains sulfur or phosphorus.

428 Titanium compound containing:
This subclass is indented under subclass 425. Subject matter wherein the composition also contains a titanium compound.

429 **Organic material containing:**
This subclass is indented under subclass 425. Subject matter wherein the composition contains organic material.

430 **Titanium compound containing:**
This subclass is indented under subclass 419. Subject matter wherein the composition also contains a titanium compound.

431 **Silicon or aluminum compound containing;**
This subclass is indented under subclass 419. Subject matter wherein the composition also contains silicon or an aluminum compound.

432 **Lead compound containing, e.g., litharge, etc. (Pb):**
This subclass is indented under subclass 401. Subject matter wherein the composition contains a lead compound.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, appropriate subclasses for lead compounds, per se.

433 **Lead chromate containing, e.g., molybdate orange, chrome yellow, etc.:**
This subclass is indented under subclass 432. Subject matter wherein the composition contains lead chromate.

434 **Silicon containing:**
This subclass is indented under subclass 433. Subject matter wherein the composition contains silicon.

435 **Silicon containing:**
This subclass is indented under subclass 432. Subject matter wherein the composition contains silicon.

436 **Titanium compound containing (Ti):**
This subclass is indented under subclass 401. Subject matter wherein the composition contains a titanium compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
312, for opacifiers for enamel which contain a titanium compound.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, appropriate subclasses for titanium compounds, per se.

437 **Oxidation of titanium tetrahalide or product:**
This subclass is indented under subclass 436. Subject matter wherein the composition contains a titanium compound obtained by oxidation of a titanium tetrahalide.

438 **Zirconium compound containing (Zr):**
This subclass is indented under subclass 436. Subject matter wherein the composition contains a zirconium compound.

439 **Iron tungsten, molybdenum, or cerium compound containing (Fe, W, Mo, Ce):**
This subclass is indented under subclass 436. Subject matter wherein the composition contains a compound of iron, tungsten, molybdenum, or cerium.

440 **Nickel, cobalt, copper, or cadmium compound containing (Ni, Co, Cu, Cd):**
This subclass is indented under subclass 436. Subject matter wherein the composition contains a compound of nickel, cobalt, copper, or cadmium.

441 **Antimony, chromium, arsenic, or tin compound containing (Sb, Cr, As, Sn):**
This subclass is indented under subclass 436. Subject matter wherein the composition contains a compound of antimony, chromium, arsenic or tin.

442 **Aluminum compound or silicon containing:**
This subclass is indented under subclass 436. Subject matter wherein the composition contains an aluminum compound or silicon.

443 **Phosphorus containing:**
This subclass is indented under subclass 442. Subject matter wherein the composition also contains phosphorus.

444 **Alkali or alkaline earth metal containing:**
This subclass is indented under subclass 442. Subject matter wherein the composition also contains an alkali or alkaline earth metal.

445 Organic material containing:
This subclass is indented under subclass 442. Subject matter wherein the composition contains organic material.

446 Silicon containing:
This subclass is indented under subclass 442. Subject matter wherein the composition also contains silicon.

447 Organic material containing:
This subclass is indented under subclass 436. Subject matter wherein the composition contains organic material.

448 Organic nitrogen containing material:
This subclass is indented under subclass 447. Subject matter wherein the organic material is nitrogen containing.

449 Alkali or alkaline earth metal containing:
This subclass is indented under subclass 436. Subject matter wherein the composition contains an alkali or alkaline earth metal compound.

450 Zirconium compound containing (Zr):
This subclass is indented under subclass 401. Subject matter wherein the composition contains a zirconium compound.

SEE OR SEARCH THIS CLASS, SUBCLASS:
312, for opacifiers for enamel which contain a zirconium compound.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, appropriate subclasses for zirconium compounds, per se.

451 Vanadium or praseodymium containing (V, Pr):
This subclass is indented under subclass 450. Subject matter wherein the composition contains a vanadium or praseodymium compound.

452 Cadmium compound containing (Cd):
This subclass is indented under subclass 401. Subject matter wherein the composition contains a cadmium compound.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, appropriate subclasses for cadmium compounds, per se.

453 Chromium compound containing (Cr):
This subclass is indented under subclass 401. Subject matter wherein the composition contains a chromium compound.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, appropriate subclasses for chromium compounds, per se.

454 Silicon containing:
This subclass is indented under subclass 453. Subject matter wherein the composition also contains silicon.

455 Antimony containing (Sb):
This subclass is indented under subclass 401. Subject matter wherein the composition contains an antimony compound.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, appropriate subclasses for antimony compounds, per se.

456 Iron compound containing:
This subclass is indented under subclass 401. Subject matter wherein the composition contains an iron compound.

(1) Note. Clay is not sufficient to place in this subclass, unless iron is positively indicated.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, appropriate subclasses for iron compounds, per se.

457 Silicon containing, e.g., slag, turkey umber, fullers earth, etc.:
This subclass is indented under subclass 456. Subject matter wherein the composition also contains silicon, e.g., slag, turkey umber, Fullers earth, etc.

458 Compound containing carbon triple bonded to nitrogen, e.g., prussian blue, iron blue, etc.:
This subclass is indented under subclass 456. Subject matter wherein the composition includes a compound which contains carbon triple bonded to nitrogen, e.g., Prussian blue, iron blue, etc.

459 With other metal compound:
This subclass is indented under subclass 456. Subject matter wherein the composition also contains a metal other than iron.

460 Organic material containing:
This subclass is indented under subclass 456. Subject matter wherein the composition contains organic material.

461 Alkaline earth metal compound containing, other than glass, e.g., ettringite, gypsum, barium sulfate, anhydrite, etc.:
This subclass is indented under subclass 401. Subject matter wherein the composition contains an alkaline earth metal compound other than glass, e.g., ettringite, gypsum, barium sulfate, anhydrite, etc.

(1) Note. Glass is not sufficient to place a patent in this subclass unless an alkali metal is specifically recited. Mere recitation of glass will place the patent in the appropriate subclass under silicon below.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, appropriate subclasses for alkaline earth metal compounds, per se.

462 Phosphorus or boron containing:
This subclass is indented under subclass 461. Subject matter wherein the composition also contains phosphorus or boron.

463 Carbonate containing:
This subclass is indented under subclass 461. Subject matter wherein the composition contains a carbonate.

464 Calcium containing, e.g., calcite, dolomite, chalk, whiting, etc.:
This subclass is indented under subclass 463. Subject matter wherein the composition contains a calcium compound, such as calcite, dolomite, chalk, whiting, etc.

(1) Note. Calcium carbonate is not required to place a patent in this subclass. Any combination of a calcium compound and a carbonate is sufficient.

465 Organic material or silicon containing:
This subclass is indented under subclass 464. Subject matter wherein the composition contains organic material or silicon.

466 Soil or inorganic silicon compound containing, e.g., granite, chrysotile, asbestos, etc.:
This subclass is indented under subclass 461. Subject matter wherein the composition contains soil or an inorganic silicon compound, e.g., granite, chrysotile, asbestos, etc.

467 Aluminum compound containing, e.g., zeolites, perlites, etc.:
This subclass is indented under subclass 466. Subject matter wherein the composition contains an aluminium compound, e.g., zeolites, perlite, satin white, etc.

468 Clay or material derived from clay containing, e.g., bentonite, montmorillonite, etc.:
This subclass is indented under subclass 467. Subject matter wherein the composition contains clay or a material indicated to have been derived from clay, e.g., montmorillonite, bentonite, kaolin, etc.

(1) Note. Some clays, such as montmorillonites, bentonite, etc., contain an alkaline earth metal and therefor make a composition containing them proper for this subclass alone; however, note that kaolin would not bring a composition into this area unless the composition also contained an alkaline earth metal.

469 Talc, e.g., soapstone, etc.:
This subclass is indented under subclass 466. Subject matter containing talc.

470 Calcium silicate, e.g., dicalcium silicate or silicate hydrate, tobermorite, wollastonite, etc.:
This subclass is indented under subclass 466. Subject matter wherein the composition contains calcium silicate, e.g., dicalcium silicate, or silicate hydrate, tobermorite, wollastonite, etc.

(1) Note. A silicate compound containing both magnesium and calcium is not considered sufficient to place in this subclass. For such a composition see subclass 466.

471 Organic material containing:
This subclass is indented under subclass 461. Subject matter wherein the composition contains organic material.

472 Elemental carbon containing, e.g., carbon black, etc.:
This subclass is indented under subclass 401. Subject matter wherein the composition contains carbon in the elemental form, e.g., carbon black, etc.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, appropriate subclasses for elemental carbon and processes of manufacturing elemental carbon, per se.
516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclass 901 for a collection of art under the Class definition which discloses subject matter relating to a colloid system comprising substantially pure elemental Carbon in one of its various forms such as graphite, lamp black, carbon black, fullerenes.

473 Sulfur containing treatment therewith or product:
This subclass is indented under subclass 472. Subject matter wherein the composition contains sulfur or the composition is treated with sulfur or product thereof.

474 Metal compound containing:
This subclass is indented under subclass 472. Subject matter wherein the composition contains a metal compound.

475 Silicon containing:
This subclass is indented under subclass 472. Subject matter wherein the composition contains silicon.

476 Organic material containing, e.g., wax paraffin, etc.:
This subclass is indented under subclass 472. Subject matter wherein the composition contains organic material.

477 Fat, oil, higher fatty acid or derivative, e.g., tallow, mineral oil, essential oils, salts, amides and esters of higher fatty acids, soap, etc.:
This subclass is indented under subclass 476. Subject matter wherein the composition contains a fat, oil, higher fatty acid or a derivative thereof, e.g., tallow, mineral oil, essential oil, a salt, amide or ester of a higher fatty acid, soap, etc.

478 Oxidation of carbon black or product thereof, e.g., treating of carbon black to increase volatile content or to lower PH, etc.:
This subclass is indented under subclass 472. Subject matter involving oxidation of carbon black, wherein such a process is claimed or a product of such a process is a part of the composition.

479 Bismuth, vanadium, molybdenum or tungsten compound containing (Bi, V, Mo, W):
This subclass is indented under subclass 401. Subject matter wherein the composition contains a compound of bismuth, vanadium, molybdenum or tungsten.

480 Cobalt, nickel, or copper compound containing (Co, Ni, or Cu):
This subclass is indented under subclass 401. Subject matter wherein the composition contains a compound of cobalt, nickel, or copper.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, appropriate subclasses for copper, cobalt or nickel compounds, per se.

481 Silicon containing:
This subclass is indented under subclass 401. Subject matter wherein the composition contains silicon.

(1) Note. This subclass contains compositions having an organic silicon compound and not containing an inorganic silicon compound.

482 Inorganic silicon compound, e.g., diatomaceous earth, soil, glass, sand, etc., or material derived therefrom:
This subclass is indented under subclass 481. Subject matter wherein the composition contains diatomaceous earth, soil, glass, an inorganic silicon compound or material derived therefrom.

(1) Note. For the purposes of these subclasses, 400+, glass will be considered to contain silicon and to not contain an alkaline earth metal unless contra is positively indicated.

483 Aluminum compound containing, e.g., feldspar, mullite, etc.:
This subclass is indented under subclass 482. Subject matter wherein the composition also contains aluminum, e.g., feldspar, mullite, etc.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, appropriate subclasses for aluminum compounds, per se.

484 Special process of milling, grinding, crushing or comminuting or product:
This subclass is indented under subclass 483. Subject matter including a significant process of milling, grinding, crushing, or comminuting materials, e.g., reciting grinding materials or hardness factor, type of apparatus, etc. or product thereof.

485 Special process of pelletizing or agglomerating or product:
This subclass is indented under subclass 483. Subject matter including a significant process of pelletizing or agglomerating materials or product thereof.

486 Clay or material derived therefrom containing:
This subclass is indented under subclass 483. Subject matter wherein the composition contains clay, e.g., kaolin, etc.

487 Organic material containing:
This subclass is indented under subclass 486. Subject matter wherein the composition contains organic material.

488 Bleaching treatment or product:
This subclass is indented under subclass 486. Subject matter wherein the composition is treated by bleaching or product thereof.

489 Glass containing:
This subclass is indented under subclass 482. Subject matter wherein the composition contains glass.

(1) Note. Material referred to simply as glass will be assumed to contain silicon and therefor classified in this subclass.

490 Organic silicon material containing:
This subclass is indented under subclass 482. Subject matter wherein the composition includes organic silicon containing material.

491 Organic material containing:
This subclass is indented under subclass 482. Subject matter wherein the composition contains organic material.

492 Treatment of alkali silicate with mineral acid or product:
This subclass is indented under subclass 482. Subject matter including treatment of alkali metal silicate with mineral acid or product thereof.

493 Organic pigment containing:
This subclass is indented under subclass 401. Subject matter wherein the composition contains an organic pigment.

494 Mixed pigments containing:
This subclass is indented under subclass 493. Subject matter wherein the composition contains more than one pigment at least one of which is an organic pigment.

495 Quinacridone pigment or derivative:
This subclass is indented under subclass 494. Subject matter wherein the composition contains a quinacridone pigment or derivative.

496 Pigment containing -N=N- group:
This subclass is indented under subclass 493. Subject matter wherein the pigment contains an -N=N- group.

497 Quinacridone pigment or derivative:
This subclass is indented under subclass 493. Subject matter wherein the composition contains a quinacridone pigment or derivative.

498 Ring containing atom other than carbon:
This subclass is indented under subclass 493. Subject matter wherein the pigment compound has a carbon ring containing at least one atom other than carbon in the ring.

499 Organic material containing:
This subclass is indented under subclass 401. Subject matter wherein the composition contains organic material.

500 Rosin, natural resin or derivative, e.g., shellac, dammar, colophony, etc.:
This subclass is indented under subclass 499. Subject matter wherein the composition contains rosin, natural resin or derivative, e.g., shellac, dammar, colophony, turpentine, etc.

501.1 Carbohydrate, proteinaceous material, gum, or lignin (e.g., pectate alginate, albumin, glue, etc.):
This subclass is indented under subclass 499. Compositions which contain a carbohydrate, proteinaceous material, gum, or lignin in addition to the organic material.

(1) Note. See this class, subclass 124.1 for the definition of a proteinaceous material.

(2) Note. See this class, subclass 124.1, (5) Note for the definition of a carbohydrate.

502 Wax, paraffin, bituminous material, asphalt, oil shale, tar or pitch containing:
This subclass is indented under subclass 499. Subject matter wherein the composition contains wax, paraffin, bituminous material, asphalt, oil shale, tar, or pitch.

503 Sulfur or phosphorus containing:
This subclass is indented under subclass 499. Subject matter wherein the composition contains sulfur or phosphorus.

504 Fat, oil, higher fatty acid or derivative, e.g., tallow, mineral oil, essential oils, salts, amides and esters of higher fatty acids, soap, etc.:
This subclass is indented under subclass 499. Subject matter wherein the composition contains a fat, oil, higher fatty acid or derivative, e.g., tallow, mineral oil, essential oils, salts, amides and esters of higher fatty acids, soap, etc.

505 Carboxylic acid or derivative, e.g., tannin, etc.:
This subclass is indented under subclass 499. Subject matter wherein the composition contains a carboxylic acid or derivative, e.g., tannin, etc.

506 Ring containing atom other than carbon:
This subclass is indented under subclass 499. Subject matter wherein the organic material has a carbon ring containing at least one atom other than carbon in the ring.

600 Alkali metal silicate containing:
This subclass is indented under the class definition. Coating or plastic compositions s in the preparation of which an alkali metal silicate, e.g., water glass, etc. is employed or process of preparing such composition

(1) Note. Claims which include a reference to filler or aggregate only, with no additional identification of the filler as to composition, structure or other properties in the claims, will be classified based on other specified elements of the claim rather than consulting the specification for the type of filler or aggregate employed.

SEE OR SEARCH THIS CLASS, SUBCLASS:

494, for filler, per se, made by treatment of alkali silicate.

601 Pore forming or product thereof:

This subclass is indented under subclass 600. Subject matter wherein pores are formed in the process or product of such process.

SEE OR SEARCH THIS CLASS, SUBCLASS:

605, for porous compositions in which the porosity is due solely to the physical nature of an ingredient such as a hollow filler material.

SEE OR SEARCH CLASS:

428, Stock Material or Miscellaneous Articles, subclasses 304.4+ for a stock material product of at least two components, in which one of the components is either porous or cellular, and subclass 613 for porous metallic stock.

602 Perlite, slag, ash or ceramic material:

This subclass is indented under subclass 601. Subject matter employing perlite, slag, ash or ceramic material.

603 Organic material containing:

This subclass is indented under subclass 601. Subject matter employing organic material.

604 Process employing steam, electrical, magnetic or wave energyor product thereof or specified particle size or shape:

This subclass is indented under subclass 601. Subject matter (1) employing steam, electrical, magnetic or wave energy or (2) wherein particle size or shape is specifically recited.

605 Hollow, foam, cellular or porous material containing:

This subclass is indented under subclass 600. Subject matter including hollow, foam, cellular or porous material, e.g., porous filler or aggregate, etc.

606 Portland type cement containing:

This subclass is indented under subclass 600. Subject matter involving portland type cement.

(1) Note. For definition of such cements see the definition of subclass 739 of this class.

607 Soil, diatomaceous earth or clay containing or material for treating soil or earth (e.g., soil stabilization, etc.):

This subclass is indented under subclass 606. Subject matter involving soil, diatomaceous earth or clay or material or process for treating earth or soil such as soil stabilization.

608 Organic material containing:

This subclass is indented under subclass 606. Subject matter wherein the composition contains organic material.

609 Carbohydrate containing:

This subclass is indented under subclass 608. Subject matter containing carbohydrate.

610 Natural resin containing (e.g., rosin, shellac, turpentine, tall oil, etc.):

This subclass is indented under subclass 600. Subject matter containing a natural resin, e.g., rosin, shellac, turpentine, tall oil, balsam, copal, colophony, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

218, and 657, for compositions containing natural resins not including an alkali silicate.

611 Calcium sulfate containing:

This subclass is indented under subclass 600. Subject matter containing calcium sulfate, e.g., anhydrite, gypsum, plaster of paris, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

772+, for compositions containing calcium sulfate and an inorganic settable ingredient.

612 Lime containing:

This subclass is indented under subclass 600. Subject matter employing lime, i.e., calcium oxide or calcium hydroxide.

SEE OR SEARCH THIS CLASS, SUBCLASS:

792+, for compositions employing lime and not including an alkali silicate.

613 Organic material containing:

This subclass is indented under subclass 612. Subject matter wherein the composition contains organic material.

614 Protein containing:

This subclass is indented under subclass 600. Subject matter containing protein, e.g., glue, gelatin, albumin, blood, cereal grain, gluten, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

124+, and 645+, for a composition containing protein and no alkali silicate.

615 Carbohydrate containing:

This subclass is indented under subclass 614. Subject matter containing carbohydrate.

616 With other organic material:

This subclass is indented under subclass 614. Subject matter containing other organic material in addition to protein.

617 Carbohydrate containing:

This subclass is indented under subclass 600. Subject matter envolving a composition containing carbohydrate.

618 Cellulose:

This subclass is indented under subclass 617. Subject matter employing cellulose material, e.g., plant material.

619 Wood, paper, or paper pulp:

This subclass is indented under subclass 618. Subject matter employing wood, paper or paper pulp.

620 Higher fatty acid or ester, amide or salt thereof containing:

This subclass is indented under subclass 600. Subject matter employing a composition containing a higher fatty acid or an ester, amide or salt thereof.

(1) Note. For the purposes of this subclass, higher fatty acid is defined as a long-chain alphatic monocarboxylic acid, characterized by having the carbonyl of the carboxylic acid bonded directly to one end of an acyclic chain of at least seven uninterrupted carbons, i.e., the acid moiety.

621 With other organic material or asbestos:

This subclass is indented under subclass 620. Subject matter containing other organic material in addition to the higher fatty acid or derivative.

622 Wax, paraffin, oil shale, or bituminous material containing (e.g., asphalt, pitch, tar, etc.):

This subclass is indented under subclass 600. Subject matter employing a wax, paraffin, oil shale, or bituminous material, e.g., tar. asphalt, pitch, etc.

623 Free metal or alloy containing:

This subclass is indented under subclass 600. Subject matter involving a free metal or alloy.

(1) Note. For the purposes of this subclass a free metal or alloy is defined as any metal in the zero valence state.

SEE OR SEARCH THIS CLASS, SUBCLASS:

403, for filler compositions, per se, containing a free metal or alloy.

624 Ash, slag, slag wool, rock wool, mineral wool, asbestos, or organic garbage or sewage material containing:

This subclass is indented under subclass 600. Subject matter employing slag, ash, slag wool, rock wool, mineral wool, asbestos or organic garbage, refuse or sewage.

625 Asbestos containing:

This subclass is indented under subclass 624. Subject matter employing asbestos material.

626 Mica, elemental carbon, zeolite or talc containing:

This subclass is indented under subclass 600. Subject matter involving mica, elemental carbon, zeolite or talc.

627 Sulfur containing (e.g., alum, etc.):
This subclass is indented under subclass 600. Subject matter wherein sulfur or a compound thereof is employed, e.g., alum, etc.

628 Boron containing:
This subclass is indented under subclass 600. Subject matter wherein boron or a compound thereof is employed.

629 Phosphorus containing:
This subclass is indented under subclass 600. Subject matter wherein phosphorus or a compound thereof is employed.

630 Organic material containing:
This subclass is indented under subclass 629. Subject matter employing organic material.

631 Perlite, rock, stone, shale, slate, flint, granite, feldspar or limestone containing:
This subclass is indented under subclass 600. Subject matter employing perlite, rock, stone, shale, slate, flint, granite, feldspar or limestone.

SEE OR SEARCH THIS CLASS, SUBCLASS:
400, and 467, for filler materials, per se.

632 Clay containing:
This subclass is indented under subclass 600. Subject matter wherein clay is employed.

633 Soil or diatomaceous earth containing, or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 600. Subject matter involving soil or diatomaceous earth or material for treating soil or earth, e.g., soil stabilization, etc.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

634 Organic material containing:
This subclass is indented under subclass 600. Subject matter employing organic material.

635 Zirconium, titanium, zinc, lead, iron, or tin compound containing (Zr, Ti, Zn, Pb, Fe, Sn):
This subclass is indented under subclass 600. Subject matter employing a zirconium, zinc, lead, iron or tin compound.

636 Particle size specified:
This subclass is indented under subclass 600. Subject matter wherein particle size of a constituent is specified.

637 Fluorine containing:
This subclass is indented under subclass 600. Subject matter wherein fluorine is employed.

638 Inorganic settable ingredient containing:
Compositions containing an inorganic ingredient which sets or hardens when mixed with water or aqueous solutions, usually forming a hard, stone-like product.

(1) Note. This subclass and indented subclasses include compositions containing inorganic cementitious materials which set or harden by hydration or hydrolysis or the inorganic material, or compound contained therein.

(2) Note. Claims to filler or aggregate only, with no additional identification of the filler as to composition or structure in the claims, will be classified based on other specified elements of the claim rather than consulting the specification for the type of filler or aggregate employed; on the assumption that use of such is routine in the art, without indication to the contrary in the case.

SEE OR SEARCH THIS CLASS, SUBCLASS:
400+, for filler or aggregate compositions per se which may be used in inorganic settable compositions.
819, through 823, for materials or ingredients designed to be added to an inorganic settable composition to improve or modify its properties.

SEE OR SEARCH CLASS:
75, Specialized Metallurgical Processes, Compositions for Use Therein, Con-

solidated Metal Powder Compositions, and Loose Metal Particulate Mixtures, subclass 235 for a composition having a continuous phase of free metal made by consolidating metal particles and containing Al2O3.

264, Plastic and Nonmetallic Article Shaping or Treating: Processes, appropriate subclasses for processes, within the class definition, including a significant molding operation or a significant treatment of the molded article. In particular, see subclass 30, 31, 42, 125, 228, 333, 603+.

366, Agitating, subclasses 2+ for physical processes of mixing mortars and concrete which are clearly distinct from the composition.

520, Synthetic Resins or Natural Rubbers, appropriate subclasses, particularly Class 524, for a settable composition, otherwise proper for Class 106, subclasses 638+, when the composition contains a synthetic resin or rubber under the definition of such in the class 520 definitions.

639 For use underwater:
This subclass is indented under subclass 638. Subject matter involving compositions specifically designed for use underwater or processes adapted therefor.

640 Free metal or alloy containing (e.g., dust, powder, etc.):
This subclass is indented under subclass 638. Subject matter employing a free metal or alloy, e.g., dust, powder, etc.

(1) Note. For the purposes of this subclass a free metal or alloy is defined as any metal in the zero valence state.

SEE OR SEARCH THIS CLASS, SUBCLASS:

403+, for a filler or aggregate composition, per se, which may be used in a settable composition and contains a free metal or alloy.

641 Aluminum:
This subclass is indented under subclass 640. Subject matter employing aluminium.

642 Organic material containing:
This subclass is indented under subclass 641. Subject matter employing organic material.

643 Iron or steel:
This subclass is indented under subclass 640. Subject matter employing iron or steel.

644 Fiber, bar or wire containing:
This subclass is indented under subclass 643. Subject matter wherein the composition includes a fiber, bar or wire shaped element.

645 Protein containing (e.g., glue, gelatin, albumin, blood, etc.):
This subclass is indented under subclass 638. Subject matter employing protein, e.g., glue, gelatin, albumin, blood, cereal grain, gluten, isinglass, feathers, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:

124+, for a composition containing protein and no settable material.

646 Hollow, foam, cellular or porous material:
This subclass is indented under subclass 645. Subject matter involving hollow, foam, cellular or porous material.

SEE OR SEARCH CLASS:

516, Colloid Systems and Wetting Agents; Subcombinations Thereof; Processes of Making, Stabilizing, Breaking, or Inhibiting, subclasses 1+ for continuous gas or vapor phase colloid system (e.g., smoke, fog, aerosol, cloud, mist) or agents for such systems or making or stabilizing such systems or agents, when generically claimed or when there is no hierarchically superior provision in the USPC for the specifically claimed art.

647 Soil, diatomaceous earth, clay, rock, stone, granite, flint, slate, shale, or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 645. Subject matter including soil, diatomaceous earth, clay, rock, stone, granite, flint, slate, shale, or material for treating soil or earth, e.g., wells or roads, etc.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

648 With organic material other than protein:
This subclass is indented under subclass 647. Subject matter including additional organic material other than protein.

649 Cereal grain or derived therefrom or vegetable flour or meal (e.g., gluten, corn flour, rice, rye, etc.):
This subclass is indented under subclass 645. Subject matter including cereal grain or material derived therefrom or vegetable flour or meal, e.g., gluten, corn flour, rice, rye, etc.

(1) Note. For the purposes of this subclass, cereal grains or flours will be assumed to contain protein and will be classified herein in the absence of an indication to the contrary in the patent.

650 Calcium sulfate containing:
This subclass is indented under subclass 645. Subject matter including calcium sulfate.

651 With organic material other than protein:
This subclass is indented under subclass 650. Subject matter including organic material other than protein.

652 Carbohydrate:
This subclass is indented under subclass 651. Subject matter including carbohydrate.

653 Plant or vegetable fiber (e.g., wood, sawdust, etc.):
This subclass is indented under subclass 652. Subject matter including plant or vegetable fiber, e.g., wood, sawdust, etc.

654 Portland type cement, slag, talc, mica, asbestos, ash, or alum containing:
This subclass is indented under subclass 650. Subject matter which also includes portland type cement, slag, talc, mica, asbestos, ash, or alum.

655 With organic material other than protein:
This subclass is indented under subclass 645. Subject matter which includes additional organic material other than protein.

656 Carbohydrate:
This subclass is indented under subclass 655. Subject matter including carbohydrate.

657 Natural resin containing (e.g., shellac, turpentine, balsam, copal, etc.):
This subclass is indented under subclass 638. Subject matter involving natural resin, e.g., shellac, turpentine, balsam, copal, etc.

658 Calcium sulfate, aluminous or oxy salt type cement:
This subclass is indented under subclass 657. Subject matter including calcium sulfate, oxy salt type or aluminous cement.

659 Rosin or tall oil (e.g., colophony, etc.):
This subclass is indented under subclass 657. Subject matter including rosin or tall oil, e.g., colophony, etc.

660 Wax containing (e.g.., petroleum wax, beeswax, montan wax, carnauba wax, spermaceti, etc.):
This subclass is indented under subclass 638. Subject matter involving wax.

(1) Note. Wax for the purpose of this subclass is intended to include a hydrocarbon wax, an ester-type wax or where the term wax is recited but undefined, e.g., petroleum wax, beeswax, montan wax, carnauba wax, spemaceti, etc.

661 Higher fatty acid or ester, amide or salt thereof containing (e.g., fish oil, vegetable oil, soap, etc.):
This subclass is indented under subclass 638. Subject matter employing a composition containing a higher fatty acid or an ester, amide or salt thereof, e.g., fish oil, vegetable oil, soap, etc.

(1) Note. For the purposes of this subclass, higher fatty acid is defined as a long-chain alphatic monocarboxylic acid, characterized by having the carbonyl of the carboxylic acid bonded directly to

one end of an acyclic chain of at least seven uninterrupted carbons, i.e., the acid moiety.

662 Soil, diatomaceous earth, shale, slate or clay, containing, or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 661. Subject matter including soil, diatomaceous earth, shale, slate, or clay or material for treating soil or earth, e.g., wells or roads, etc.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement type materials.

663 Linseed oil or tallow containing:
This subclass is indented under subclass 661. Subject matter including linseed oil or tallow.

664 Portland type cement containing:
This subclass is indented under subclass 661. Subject matter wherein the composition includes portland cement.

665 With other organic material:
This subclass is indented under subclass 661. Subject matter including additional organic material other than the higher fatty acid or derivative.

666 Stearic acid or derivative:
This subclass is indented under subclass 661. Subject matter wherein the composition includes stearic acid or a derivative thereof.

667 Lime containing:
This subclass is indented under subclass 661. Subject matter wherein the composition includes lime.

668 Bituminous material or tarry residue, pitch, or coal containing:
This subclass is indented under subclass 638. Subject matter involving bituminous material or tarry residue, pitch or coal, e.g., asphalt, etc.

669 Soil, diatomaceous earth, or clay, containing, or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 668. Subject matter including soil, diatomaceous earth or clay or material for treating soil or earth, e.g., soil stabilization, well treating, etc.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

670 Calcium sulfate containing:
This subclass is indented under subclass 668. Subject matter wherein the composition includes calcium sulfate.

671 With other organic material:
This subclass is indented under subclass 668. Subject matter including additional organic material other than bituminous material, tarry residue, pitch or coal.

672 Hollow, foam, cellular or porous material containing or method of forming cellular or porous product:
This subclass is indented under subclass 638. Subject matter involving hollow, foam, cellular or porous material or a process of forming cellular or porous material.

(1) Note. To be proper for this subclass, an intent to achieve porisity, etc., must be evident, i.e., mere inclusion of, for example, wood as a filler, which is known to be porous to a degree, is not sufficient to place the patent herein.

673 Peroxide or hypochlorite containing:
This subclass is indented under subclass 672. Subject matter including a peroxide or hypochlorite.

674 Carbohydrate containing:
This subclass is indented under subclass 672. Subject matter including a carbohydrate.

675 Perlite or vermiculite containing (e.g., jeffersite, etc.):
This subclass is indented under subclass 672. Subject matter including perlite or vermiculite, e.g., jeffersite, etc.

676 Glass containing:
This subclass is indented under subclass 672. Subject matter including glass.

677 Organic material containing:
This subclass is indented under subclass 672. Subject matter wherein the composition includes organic material.

678 Organic sulfur or organic phosphorus:
This subclass is indented under subclass 677. Subject matter including organic sulfur or organic phosphorus material.

679 Slag, cinder or ash containing:
This subclass is indented under subclass 672. Subject matter including slag, cinder or ash.

680 Calcium sulfate containing (e.g., anhydrite, plaster of paris, gypsum, etc.):
This subclass is indented under subclass 672. Subject matter containing calcium sulfate, e.g., anhydrite, plaster of paris, gypsum, etc.

681 Soil, diatomaceous earth, clay, shale, slate or rock material containing or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 672. Subject matter including soil, diatomaceous earth, clay, shale, slate, or rock material or material for treating soil or earth, e.g., well treating, soil stabilization, etc.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

682 Physical introduction of gas (e.g., by mixing, agitation, injection, whipping, etc.):
This subclass is indented under subclass 672. Subject matter involving physical introduction of gas, e.g., by mixing, agitation, injection, whipping, etc.

683 Oxy salt type cement:
This subclass is indented under subclass 638. Subject matter containing as the cementitious ingredient, the combination of an oxide and another salt which react together, forming a hardening material.

(1) Note. The combination usually comprises the combination of the oxide and chloride or sulfate of the same metal, such as magnesium or zinc.

684 Soil, diatomaceous earth, clay, slate or shale containing or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 683. Subject matter also containing soil, diatomaceous earth, clay, slate or shale or material for treating soil or earth.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

685 Magnesium oxy-chloride (e.g., sorel cement, etc.):
This subclass is indented under subclass 683. Subject matter including magnesium oxy-chloride, e.g., Sorel cement, etc.

686 Organic material containing:
This subclass is indented under subclass 685. Subject matter including organic material.

687 Carbohydrate (e.g., cellulose, etc.):
This subclass is indented under subclass 686. Subject matter including carbohydrate, e.g., cellulose, etc.

688 Specified filler, dye or pigment (e.g., silica, feldspar, carbon, talc, asbestos, slag, mineral wool, etc.):
This subclass is indented under subclass 685. Subject matter including a specified filler, dye or pigment, e.g., silica, feldspar, carbon, talc, asbestos, slag, mineral wool, etc.

689 Organic material or specified filler:
This subclass is indented under subclass 683. Subject matter including organic material or a specified filler.

690 Phosphate based cement:
This subclass is indented under subclass 638. Subject matter involving compositions employing phosphates or phosphorus acids as a reactive compound of the settable material.

(1) Note. Commonly the composition comprises: 1. an inorganic salt of an acid phosphate, especially alkali metal or ammonium acid phosphates and 2. a basic material such as magnesium oxide, deadburned magnesite, deadburned dolomite or deadburned aluminates of the alkali and alkaline earth metals.

691 Specified filler or organic material containing:
This subclass is indented under subclass 690. Subject matter including a specified filler or organic material.

692 Aluminous cement (e.g., high alumina, calcium aluminate, etc.):
This subclass is indented under subclass 638. Subject matter involving compositions which are cements of the high alumina type or calcium aluminate.

(1) Note. Commonly, high alumina or calcium aluminate cements are those containing a large proportion of aluminium oxide, together with lime, and smaller amounts of iron oxide and silica, and are formed by fusion of the raw materials. The ordinary high alumina cement contains approximately forty per cent alumina.

SEE OR SEARCH CLASS:
423, Chemistry of Inorganic Compounds, subclass 600 for calcium aluminate, per se.

693 Cement clinker preparation:
This subclass is indented under subclass 692. Subject matter involving the preparation of aluminous cement clinker.

694 Soil, diatomaceous earth, clay, shale, slate, or rock-type material containing or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 692. Subject matter employing soil, diatomaceous earth, clay, shale, slate or rock-type material for treating soil or earth.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

695 With other cement material (e.g., portland, calcium sulfate, etc.):
This subclass is indented under subclass 692. Subject matter also containing other cement material such as Portland type cement, calcium sulfate, etc.

696 Organic material containing:
This subclass is indented under subclass 692. Subject matter containing organic material.

697 Organic garbage, refuse, sewage or waste material containing or treating (other than sulfite waste liquor):
This subclass is indented under subclass 638. Subject matter involving compositions containing or derived from garbage, refuse, sewage or other waste material of an organic nature, other than sulfite waste liquor.

SEE OR SEARCH THIS CLASS, SUBCLASS:
745, for use of waste material as raw material or fuel in preparing portland type cement, per se, i.e., clinker preparation.

698 Perlite containing:
This subclass is indented under subclass 638. Subject matter involving compositions containing perlite.

699 Asbestos containing (e.g., amosite, chrysotile, etc.):
This subclass is indented under subclass 638. Subject matter involving compositions containing asbestos, e.g., amosite, chrysotile, fibrous actinolite, etc.

700 Slag, ash or organic material containing:
This subclass is indented under subclass 699. Subject matter including slag, ash or organic material.

701 Calcium sulfate containing (e.g., gypsum, plaster of paris, anhydrite, etc.):
This subclass is indented under subclass 700. Subject matter including calcium sulfate, e.g., plaster of paris, anhydrite, gypsum, etc.

702 Soil, diatomaceous earth, clay, slate, shale or rock containing or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 699. Subject matter employing soil, diatomaceous earth, clay, shale, slate or rock or material for treating soil or earth.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

703 Portland type cement:
This subclass is indented under subclass 699. Subject matter including portland type cement.

704 Lime containing:
This subclass is indented under subclass 699. Subject matter including lime.

705 Ash containing (e.g. fly ash, volcanic ash, coal ash, etc.):
This subclass is indented under subclass 638. Subject matter involving compositions containing ash, e.g., fly ash, volcanic ash, bottom ash, coal ash, etc.

(1) Note. Any material identified merely as ash is proper for this subclass, however, heavier residues of burning such as cinders, clinkers, etc. are not intended for this subclass if so identified.

706 Soil, diatomaceous earth, clay, shale, slate or rock containing or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 705. Subject matter employing soil, diatomaceous earth, clay, shale, slate or rock or material for treating soil or earth.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

707 With slag, coke, cinder, stack dust, kiln dust or flue dust:
This subclass is indented under subclass 705. Subject matter employing slag, coke, cinder, stack dust, kiln dust, or flue dust.

708 Organic material containing:
This subclass is indented under subclass 705. Subject matter including organic material.

709 Portland type cement:
This subclass is indented under subclass 705. Subject matter including portland type cement.

710 With additional lime:
This subclass is indented under subclass 705. Subject matter including lime additional to the lime content of the ash material.

711 Mineral fibers or glass fibers containing (e.g., slag wool, cotton wool, mineral wool, rock wool, etc.):
This subclass is indented under subclass 638. Subject matter which includes glass fibers or mineral fibers, e.g., slag wool, cotton wool, mineral wool, rock wool, etc.

SEE OR SEARCH CLASS:
501, Compositions: Ceramic, subclass 36 for mineral fibers, per se.

712 Color additive (other than whitener):
This subclass is indented under subclass 638. Subject matter including a color additive other than a whitener.

713 Portland type cement:
This subclass is indented under subclass 638. Subject matter employing a composition containing portland type cement.

(1) Note. For a definition of such cements see the definition of subclass 739 of this class.

SEE OR SEARCH THIS CLASS, SUBCLASS:
739+, for portland type cement, per se, and processes of preparing same.

714 Slag containing (e.g., blast furnace slag, etc.):
This subclass is indented under subclass 713. Subject matter wherein the composition also contains slag, e.g., blast furnace slag, etc.

(1) Note. As slag, a by-product from various metallurgical processes, is a relatively indefinite or broad term in the art, this subclass is intended to take compositions referred to as slag by the applicant and where appropriate the claims may also be crossed elsewhere based upon the disclosure by applicant as to the specific composition of the slag.

715 Calcium sulfate specified (e.g., gypsum, anhydrite, plaster of paris, etc.):
This subclass is indented under subclass 714. Subject matter wherein the composition also contains calcium sulfate, e.g., plaster of paris, anhydrite, gypsum, etc.

716 With mica, talc, cinder, glass, vermiculite, coke breeze or kiln dust:
This subclass is indented under subclass 713. Subject matter wherein the composition contains mica, talc, cinder, vermiculite, coke breeze, or kiln dust.

717 Boron, elemental carbon or phosphorus containing:
This subclass is indented under subclass 713. Subject matter wherein the composition contains boron, elemental carbon or phosphorus.

718 Soil, diatomaceous earth, clay, slate or shale, containing or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 713. Subject matter employing soil, diatomaceous earth, clay, slate, or shale or material for treating soil or earth.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

719 Organic material containing:
This subclass is indented under subclass 718. Subject matter wherein the composition also includes organic material.

720 Carbohydrate:
This subclass is indented under subclass 719. Subject matter including carbohydrate material, e.g., plant material, etc.

721 Silica or lime added:
This subclass is indented under subclass 718. Subject matter wherein the composition contains lime or silica in addition to that contained in the portland cement, per se.

722 Calcium sulfate specified (e.g., gypsum, anhydrite, plaster of paris, etc.):
This subclass is indented under subclass 718. Subject matter wherein the composition contains calcium sulfate specified in the claims.

723 Process involving steam, electrical, magnetic or wave energy, vibration or vacuum or product thereof:
This subclass is indented under subclass 713. Subject matter involving a process employing steam, electrical, magnetic or wave energy, vibration or vacuum.

724 Organic material containing:
This subclass is indented under subclass 713. Subject matter including organic material.

725 Organic sulfur compound:
This subclass is indented under subclass 724. Subject matter including an organic sulfur containing compound.

726 Cellulose or silica containing (e.g., sand, etc.):
This subclass is indented under subclass 725. Subject matter wherein the composition also contains cellulose or silica, e.g., sand, plant material, etc.

727 Organic nitrogen compound:
This subclass is indented under subclass 724. Subject matter including an organic nitrogen containing compound.

728 Carboxylic acid, ester or salt thereof:
This subclass is indented under subclass 724. Subject matter wherein the composition contains a carboxylic acid or an ester, or salt of a carboxylic acid.

729 Carbohydrate:
This subclass is indented under subclass 724. Subject matter including a carbohydrate.

730 Starch, dextran, cellulose ether or gum:
This subclass is indented under subclass 729. Subject matter containing starch, dextran, a cellulose ether or a gum.

731 Plant material (e.g., vegetable fiber, wood, etc.):
This subclass is indented under subclass 729. Subject matter containing plant material, e.g., vegetable fiber, wood, etc.

732 Calcium sulfate specified (e.g., gypsum, anhydrite, plaster of paris, etc.):
This subclass is indented under subclass 724. Subject matter also including calcium sulfate.

733 Titanium, vanadium, chromium, molybdenum, tungsten, manganese, iron, copper, zinc, tin or lead compound containing (Ti V Cr Mo W Mn Fe Cu Zn Sn Pb):
This subclass is indented under subclass 713. Subject matter including a compound of titanium, vanadium, chromium, molybdenum, tungsten, manganese, iron, copper, zinc, tin, or lead.

734 Halogen containing (F Cl Br I):
This subclass is indented under subclass 713. Subject matter containing a halogen, e.g., fluorine, chlorine, bromine or iodine.

735 Calcium sulfate specified (e.g., gypsum, anhydrite, plaster of paris, etc.):
This subclass is indented under subclass 713. Subject matter wherein calcium sulfate is specifically claimed.

(1) Note. Calcium sulfate is commonly added to portland cement clinker material, per se, and is often already present in the basic cement employed in making cement compositions. This subclass is not intended to include said routine calcium sulfate containing cement compositions, but only compositions where applicant specifically recites calcium sulfate in the claimed composition.

736 Sulfur containing (e.g., alum, etc.):
This subclass is indented under subclass 713. Subject matter including sulfur or a sulfur compound.

737 Silica containing (e.g., sand, quartz, etc.):
This subclass is indented under subclass 713. Subject matter wherein the composition contains added silica other than the silica of the portland cement, per se, e.g., sand quartz, etc.

738 Rock, gravel, stone or carbonate containing (e.g., limestone, dolomite, etc.):
This subclass is indented under subclass 713. Subject matter containing rock, gravel, stone or a carbonate, e.g., limestone, dolomite, etc.

739 Portland type cement, per se, (e.g., clinker preparation, etc.):
This subclass is indented under subclass 713. Subject matter involving portland type cement, per se, which is usually formed by sintering or calcining a mixture of calcareous and argillaceous materials to produce a sintered “clinker” which is subsequently ground to a finely divided state.

SEE OR SEARCH CLASS:

34, Drying and Gas or Vapor Contact With Soilds, appropriate subclasses for processes of drying Portland type cement raw material and for processes of cooling Portland type cement clinker by solid and gas or vapor contact.

209, Classifying, Separating, and Assorting Solids, appropriate subclasses for the preliminary treatment of cement raw material by classifying, separating or assorting.

210, Liquid Purification or Separation, appropriate subclasses for filtration or other means of separation of liquid from cement raw material.

241, Solid Material Comminution or Disintegration, subclasses 1 through 30 for processes of comminuting solids, such as clinker, etc.

432, Heating, subclasses 1+ for methods of generating and applying heat to materials which do not undergo a chemical reaction during the heating. Processes which involve “calcining”, “dead-burning”, “removing water of hydra-

tion", etc. are considered to involve a chemical reaction and, when applied to the manufacture of Portland type cement, are classified herein. Residual apparatus for performing such processes is in Class 432.

740 Process involving spray drying, atomizing of solid material, steam, nonatmospheric pressure, cleaning step or avoiding contamination of equipment:
This subclass is indented under subclass 739. Subject matter including processes involving spray drying, atomizing, of solid material, steam, nonatmospheric pressure, cleaning step or avoiding contamination of equipment.

741 Color control or modification (e.g., steps to produce white cement, etc.):
This subclass is indented under subclass 739. Subject matter involving color control or modification of color of the cement, e.g., steps or additives to produce white cement, etc.

742 Cooling in reducing atmosphere:
This subclass is indented under subclass 741. Subject matter involving cooling in a reducing atmosphere.

743 Control of a parameter of operation in response to a measurement or test or to vary a result in a process:
This subclass is indented under subclass 739. Subject matter involving control of a parameter of operation in response to a measurement or test or to vary a result in a process.

744 Employment of a fluidized bed:
This subclass is indented under subclass 739. Subject matter employing a fluidized bed.

(1) Note. A fluidized bed is defined here to mean a bed of solid particles with gas flowing upward through the particles with sufficient velocity to keep the particles suspended and in motion in the gas without blowing them bodily out of the bed. The suspended particles act much like a fluid.

(2) Note. A stirred bed is generally not considered a fluidized bed. However, when a applicant refers to a fluidized bed the patent should be included in this subclass and also any other appropriate subclass, regardless of whether it meets the strict definition.

745 Waste material employed as raw material or fuel (not kiln dust):
This subclass is indented under subclass 739. Subject matter employing waste material as the raw material or fuel.

(1) Note. Kiln dust is not considered a waste material for the purposes of this subclass.

746 Electrical, magnetic or wave energy employed (e.g., electric arc, etc.):
This subclass is indented under subclass 739. Subject matter employing electrical, magnetic or wave energy, e.g., electric arc, electrostatic, etc.

747 Use of heat transmitting or conducting solid material for cooling solid material from gas or for modifying temperature of solid material:
This subclass is indented under subclass 739. Subject matter involving the use of heat transmitting or heat conducting solid material for cooling (or precipitating) solid material from gas or modifying the temperature of solid material.

748 Aftertreatment of clinker:
This subclass is indented under subclass 739. Subject matter involving aftertreatment of clinker, i.e., sintered raw material.

749 Refire or recalcine clinker:
This subclass is indented under subclass 748. Subject matter involving refiring, resintering or recalcining the clinker.

750 Specified cooling (e.g., recycling heated coolant, etc.):
This subclass is indented under subclass 748. Subject matter involving specified cooling of the clinker, e.g., recycling the heated coolant gas obtained in the step of cooling the clinker, etc.

751 Involving kiln dust (e.g., recovery, treatment, processing thereof or product, etc.):
This subclass is indented under subclass 739. Subject matter involving kiln dust, e.g., intentional recovery, treatment, purifying, processing thereof, etc.

(1) Note. Incidental production of kiln dust, inherent in clinker production is not sufficient for classification in this subclass.

752 Treatment or removal of alkali, sulfurous or chloride impurities from raw material or fuel:
This subclass is indented under subclass 739. Subject matter involving treatment or removal of alkali, sulfurous or chloride impurities from raw material or fuel.

753 Agglomerate, pellet, molded or shaped form of raw material:
This subclass is indented under subclass 739. Subject matter involving agglomerate, pellet, molded or shaped form of raw material.

754 Sheet, film, layered, brick, briquette, block, fiber, strand, cake or egg-shape:
This subclass is indented under subclass 753. Subject matter wherein the raw material is layered, egg-shaped, or in the form of a sheet, film, brick, briquette, block, fiber, strand or cake.

755 Fuel containing:
This subclass is indented under subclass 753. Subject matter wherein the agglomerated composition also contains fuel.

756 Classifying, sorting, separating, screening, sizing, grading or subdividing solid material (e.g., centrifugal separation, flotation, etc.):
This subclass is indented under subclass 739. Subject matter involving classifying, sorting, separating, screening, sizing, grading or subdividing solid material, e.g., centrifugal separation, flotation, etc.

757 Comminuting or grinding, other than nominal, of raw material or fuel (e.g., to desired size or relative sizes, etc.) or recited particle of specified size:
This subclass is indented under subclass 739. Subject matter involving comminuting, or grinding, in a specified manner, of raw material or fuel, e.g., to desired size or relative sizes, etc. or recited particle of specified size is claimed.

(1) Note. Mere recitation of milling, grinding or comminuting is not sufficient to place a patent in this subclass, but specific parameters of operation must be recited.

(2) Note. Composition containing a grinding aid material is placed above in Portland cement compositions unless the additive material is clearly not present after the grinding.

758 Raw material and fuel premixed or specified fuel:
This subclass is indented under subclass 739. Subject matter involving raw material and fuel premixed before firing or specified fuel, e.g., composition of the fuel.

759 Flow of gases to produce turbulence (e.g., spiral, helical, venturi, centrifugal, etc.):
This subclass is indented under subclass 739. Subject matter wherein a particular flow of gas designed to produce turbulence is employed, e.g., centrifugal, Venturi, spiral, helical pattern, etc.

(1) Note. Mere flow of air countercurrent to the flow of raw material or fuel is deemed routine in the art and not considered sufficient alone to place in this subclass.

760 Shape, angle, intensity or condition of fuel or flame specified (e.g., jet, oscillating, plural streams, spray, temperature, etc.):
This subclass is indented under subclass 739. Subject matter wherein the shape, angle, or other descriptive condition of the fuel or flame is specified, e.g., jet, spray, oscillating, plural streams, temperature, duration, etc.

761 Recycling exhaust gas, reusing heat from process, or purifying exhaust gas:
This subclass is indented under subclass 739. Subject matter involving recycling of exhaust gas, reusing heat from process, or purifying exhaust gas.

(1) Note. Recycling of reheated cooling gas, used to cool clinker, is classified in subclass 750 of this class.

762 Processing of exhaust gas prior to recycling (e.g., purifying, separating constituents, etc.):
This subclass is indented under subclass 761. Subject matter involving special processing of exhaust gas, prior to recycling to prepare the gas for said recycling, e.g., purifying, separating constituents, etc.

(1) Note. Purifying to remove certain impurities is provided for in subclass 752 above.

763 Ash containing raw material:
This subclass is indented under subclass 739. Subject matter wherein the raw material includes ash.

764 Organic material or sea shell containing raw material:
This subclass is indented under subclass 739. Subject matter wherein the raw material includes organic material or sea shell.

765 Calcium sulfate containing raw material:
This subclass is indented under subclass 739. Subject matter wherein the raw material includes calcium sulfate, i.e., the calcium sulfate is present prior to sintering, not a subsequent additive.

766 Phosphorus, boron, chromium, molybdenum, vanadium, or nickel containing raw material (P, B, Cr, Mo, V, Ni):
This subclass is indented under subclass 739. Subject matter wherein the raw material includes phosphorus, boron, chromium, molybdenum, vanadium or nickel.

767 Slag containing raw material:
This subclass is indented under subclass 739. Subject matter wherein the raw material includes slag, e.g., blast furnace slag, etc.

(1) Note. As slag is a relatively indefinite or broad term in the art, this subclass is intended to take compositions referred to as slag by the applicant and where appropriate the claims may also be crossed elsewhere based upon the disclosure by applicant as to the specific composition of the slag.

768 Potassium, halogen or sulfur containing raw material (K, F, Cl, Br, I, S):
This subclass is indented under subclass 739. Subject matter wherein the raw material includes potassium, fluorine, chlorine, bromine, iodine or sulfur.

769 Iron or manganese containing raw material (Fe, Mn):
This subclass is indented under subclass 739. Subject matter wherein the raw material includes iron or manganese.

770 Slurry employed:
This subclass is indented under subclass 739. Subject matter employing a slurry.

771 Preprocessing or processing of raw material before firing (e.g., preheating, etc.):
This subclass is indented under subclass 739. Subject matter involving preprocessing or processing of raw material before firing, e.g., preheating, etc.

772 Calcium sulfate (e.g., gypsum, anhydrite, plaster of paris, etc.):
This subclass is indented under subclass 638. Subject matter employing calcium sulfate, e.g., plaster of paris, anhydrite, gypsum, etc.

SEE OR SEARCH THIS CLASS, SUBCLASS:
765, for processes using calcium sulfate as a starting material in the making of Portland type cement.

SEE OR SEARCH CLASS:

423, Chemistry of Inorganic Compounds, subclass 555 for calcium sulfate, per se.

432, Heating, subclasses 1+ for methods of generating and applying heat to materials which do not undergo a chemical reaction during the heating. Processes which involve "calcining", "dead-burning", "removing water of hydration", etc. are considered to involve a chemical reaction and, when applied to the manufacture of calcium sulfate cement, are classified herein. Residual apparatus for performing such processes is in Class 432.

773 Soil, diatomaceous earth, clay, slate or shale, containing or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 772. Subject matter employing soil, diatomaceous earth, clay, slate, or shale or material for treating soil or earth.

SEE OR SEARCH CLASS:

405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

774 Organic material containing:
This subclass is indented under subclass 773. Subject matter including organic material.

775 Anhydrous calcium sulfate (e.g., anhydrite, etc.):
This subclass is indented under subclass 772. Subject matter employing anhydrous calcium sulfate, e.g., anhydrite, etc.

776 Organic material or slag containing:
This subclass is indented under subclass 775. Subject matter also containing organic material or slag.

777 Keene's cement:
This subclass is indented under subclass 775. Subject matter employing Keene's cement.

(1) Note. When a patent refers to Keene's cement it is appropriate for this subclass. Commonly, Keene's cement is dead burned gypsum ground to a desired fineness.

778 With organic material:
This subclass is indented under subclass 772. Subject matter including organic material.

779 Carbohydrate:
This subclass is indented under subclass 778. Subject matter containing a carbohydrate.

780 Cellulose (e.g., wood, cork, bark, etc.):
This subclass is indented under subclass 779. Subject matter containing cellulose, e.g., plant material, wood, cork, bark, etc.

781 Silicon, sulfur, nitrogen or phosphorus containing organic material:
This subclass is indented under subclass 778. Subject matter wherein the composition includes silicon, sulfur, nitrogen, or phosphorus containing organic material.

782 Slag, cinder, mica, talc, glass, boron or elemental carbon containing:
This subclass is indented under subclass 772. Subject matter including slag, cinder, mica, talc, glass, boron, or elemental carbon.

783 Layered or coated material, nominal molding or shaping, or other physical process (e.g., steam, electrical, magnetic or wave energy, manipulative steps, etc.):
This subclass is indented under subclass 772. Subject matter involving layered or coated material, nominal molding or shaping, or other physical process, e.g., manipulative steps, steam or electrical, magnetic or wave energy, etc.

784 Particle size specified:
This subclass is indented under subclass 772. Subject matter wherein the particle size or relative size of any ingredient is specified.

785 Stabilizer, retarder, or setting agent specified:
This subclass is indented under subclass 772. Subject matter involving use of a specified material which is indicated to be a stabilizer, retarder or setting agent for the composition.

786 By-product gypsum (e.g., phosphogypsum, etc.):
This subclass is indented under subclass 772. Subject matter employing by-product gypsum, e.g., phosphogypsum, etc.

(1) Note. By-product gypsum is simply gypsum indicated to have been derived as a by-product of another process.

787 Alum or halogen containing:
This subclass is indented under subclass 772. Subject matter including alum, fluorine, chlorine, bromine or iodine.

788 Silica containing (e.g., sand, quartz, etc.):
This subclass is indented under subclass 772. Subject matter including silica, e.g., sand, quartz, etc.

789 Slag:
This subclass is indented under subclass 638. Subject matter employing a composition containing slag.

(1) Note. As slag, a by-product from various metallurgical processes, is a relatively indefinite or broad term in the art, this subclass is intended to take compositions referred to as slag by the applicant and where appropriate the claims may also be crossed elsewhere based upon the disclosure by applicant as to the specific composition of the slag.

SEE OR SEARCH THIS CLASS, SUBCLASS:
767, for a process employing slag as a raw material in making Portland cement.

790 Organic material, soil, diatomaceous earth, clay, slate, shale, or rock-type material containing or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 789. Subject matter employing organic material, soil, diatomaceous earth, clay, slate, shale or rock type material or material for treating soil or earth.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

791 Lime containing:
This subclass is indented under subclass 790. Subject matter including a specified filler or organic material.

792 Lime:
This subclass is indented under subclass 638. Subject matter employing lime, i.e., calcium oxide or calcium hydroxide.

793 Soil, diatomaceous earth, clay, slate or shale, containing or material for treating soil or earth (e.g., soil stabilization, etc.):
This subclass is indented under subclass 792. Subject matter employing soil, diatomaceous earth, clay, slate, or shale or material for treating soil or earth.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

794 Organic material or halogen containing:
This subclass is indented under subclass 793. Subject matter employing organic material or fluorine, chlorine, bromine or iodine.

795 Organic material containing:
This subclass is indented under subclass 792. Subject matter employing organic material.

796 Silica-lime mixtures:
This subclass is indented under subclass 792. Subject matter employing silica, e.g., sand or quartz.

797 Fiber containing or step of molding or shaping of material:
This subclass is indented under subclass 796. Subject matter including fiber or involving a step of molding or shaping of material.

798 Iron, sulfur or aluminum containing (e.g., alum, etc.):
This subclass is indented under subclass 796. Subject matter including iron, sulfur or aluminium, e.g., alum, etc.

799 **Aluminum or sulfur containing (e.g., alum, etc.):**
This subclass is indented under subclass 792. Subject matter including sulfur or aluminium, e.g., alum, etc.

800 **Magnesium compound containing (e.g., quicklime, dolomite, talc, etc.):**
This subclass is indented under subclass 792. Subject matter including a magnesium compound, e.g., quicklime, dolomite, talc, etc.

801 **Magnesium compound (e.g., vermiculite, talc, soapstone, dolomite, etc.):**
This subclass is indented under subclass 638. Subject matter employing a magnesium compound, e.g., magnesium oxide or hydroxide, talc, soapstone, vermiculite, dolomite, etc.

802 **Organic material containing:**
This subclass is indented under subclass 638. Subject matter wherein the composition includes organic material.

803 **Soil, diatomaceous earth, clay, slate or shale containing, or material for treating soil or earth (e.g., soil stabilization, etc.):**
This subclass is indented under subclass 802. Subject matter employing soil, diatomaceous earth, clay, slate, or shale or material for treating soil or earth.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

804 **Carbohydrate containing:**
This subclass is indented under subclass 802. Subject matter wherein the composition includes a carbohydrate.

805 **Cellulose or plant material:**
This subclass is indented under subclass 804. Subject matter wherein the composition contains cellulose or plant material.

806 **Organic silicon, organic boron or organic phosphorus:**
This subclass is indented under subclass 802. Subject matter including organic silicon, organic boron or organic phosphorus containing material.

807 **Mineral oil or hydrocarbon oil:**
This subclass is indented under subclass 802. Subject matter including mineral oil or hydrocarbon oil.

808 **Organic nitrogen:**
This subclass is indented under subclass 802. Subject matter including an organic nitrogen containing material.

809 **Organic sulfur:**
This subclass is indented under subclass 802. Subject matter including an organic sulfur containing material.

810 **Organic acid or derivative:**
This subclass is indented under subclass 802. Subject matter including an organic acid or derivative.

811 **Soil, diatomaceous earth, clay, slate or shale containing, or material for treating soil or earth (e.g., soil stabilization:**
This subclass is indented under subclass 638. Subject matter employing soil, diatomaceous earth, clay, slate, or shale or material for treating soil or earth.

SEE OR SEARCH CLASS:
405, Hydraulic and Earth Engineering, subclass 266 for earth treatment or control employing cement.

812 **With added silica (e.g., sand, etc.):**
This subclass is indented under subclass 811. Subject matter including silica other than that contained in the clay, soil, diatomaceous earth, slate or shale.

813 **Synthetic zeolite or so-called mineral polymer containing:**
This subclass is indented under subclass 638. Subject matter employing a mineral polymer, e.g., synthetic zeolite, etc.

814 **Mica, cinder, glass or elemental carbon containing:**
This subclass is indented under subclass 638. Subject matter wherein the composition also contains mica, cinder, glass, or elemental carbon.

815 Boron, sulfur, or halogen containing (e.g., alum, etc.):
This subclass is indented under subclass 638. Subject matter wherein the composition also contains fluorine, chlorine, bromine, iodine, boron, or sulfur, e.g., alum, etc.

816 Particle size specified:
This subclass is indented under subclass 638. Subject matter wherein particle size of any material in the composition is specified.

817 Rock, stone, gravel, trass, shell or carbonate containing (e.g., limestone, etc.):
This subclass is indented under subclass 638. Subject matter wherein the composition also contains rock, stone, gravel, trass, shell or carbonate, e.g., limestone, etc.

818 Process involving a temperature of zero degrees C. or below:
This subclass is indented under subclass 638. Subject matter including a proceess involving a temperature of zero degrees Centigrade or below.

819 Additive materials for inorganic cements which contain a hydraulic settable material:
Materials or ingredients specifically designed to be added to inorganic cements which contain a settable material.

(1) Note. Many of the patents in this and indented subclasses are for water-proofing agents, stabilizers, retarders or setting agents to be added to settable compositions.

SEE OR SEARCH CLASS:
260, Chemistry of Carbon Compounds, and 423, Chemistry of Inorganic Compounds, for materials or ingredients of coating or plastic compositions which are single compounds or are reaction mixtures.

820 Expanding, foaming or porosity producing additive:
This subclass is indented under subclass 819. Subject matter wherein the additive material serves for producing porosity in, foaming or expanding inorganic cements.

821 Protein containing additive:
This subclass is indented under subclass 819. Subject matter containing protein.

822 Wax, tallow, oil, natural resin or higher fatty acid or salt, amide, or ester thereof containing additive (e.g., rosin, tall oil, hydrocarbon oil, etc.):
This subclass is indented under subclass 819. Subject matter containing wax, tallow, oil, natural resin or higher fatty acid or salt, amide, or ester thereof, e.g., rosin, tall oil, hydrocarbon oil, etc.

(1) Note. For the purposes of this subclass, higher fatty acid is defined as a long-chain alphatic monocarboxylic acid, characterized by having the carbonyl of the carboxylic acid bonded directly to one end of an acyclic chain of at least seven uninterrupted carbons, i.e., the acid moiety.

823 Organic material containing additive (e.g., carbohydrate, bituminous material, etc.):
This subclass is indented under subclass 819. Subject matter containing organic material, e.g., carbohydrate, bituminous material, etc.

CROSS-REFERENCE ART COLLECTIONS

900 Soil stabilization:
This subclass is indented under subclass 287.1. Subject matter wherein the coating or plastic composition alters the mechanical or hydraulic properties of soil.

901 Low molecular weight hydrocarbon polymer-containing mixture:
This subclass is indented under subclass 287.1. Subject matter wherein the coating or plastic composition contains a hydrocarbon polymer of molecular weight under 100 or is a liquid.

FOREIGN ART COLLECTIONS

The definitions for FOR 100-FOR 197 below correspond to the definitions of the abolished subclasses under Class 106 from which these collections were formed. See the Foreign Art Collection schedule for specific correspondences. [Note: The titles and definitions for *indented* art collections include all the details of the one(s) that are hierarchically superior.]

FOR 100 **Cellulose liberation liquor containing:**
Foreign art collection including coating or plastic compositions in thepreparation of which a waste reside or liquor for the processes of liberating cellulose; e.g., by the sulfite, sulfate, or soda processes, or fraction thereof, is used.

FOR 101 **Tall oil:**
Foreign art collection including compositions in the preparation of which tall oil or reaction product thereof is employed.

FOR 102
Foreign art collection including coating or plastic compositions in the preparation of which a protein or derivative thereof is employed.

FOR 103
Foreign art collection including compositions in which the protein is gelatine or glue, or a reaction product thereof.

FOR 104
Foreign art collection including compositions in the preparation of which a carbohydrate or derivative thereof is employed.

FOR 105
Foreign art collection including compositions in the preparation of which cellulose or a derivative thereof is employed.

FOR 106
Foreign art collection including compositions in the preparation of which a cellulose ether or ester is employed.

FOR 107
Foreign art collection including compositions in the preparation of which a carbohydrate gum, e.g., gum arabic, dextrin, etc., or derivative, is employed.

FOR 108
Foreign art collection including compositions in the preparation of which starch or derivative thereof is employed.

FOR 109
Foreign art collection including compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

FOR 110
Foreign art collection including compositions in the preparation of which a fatty oil, e.g., linseed or castor oil, is employed.

FOR 111
Foreign art collection including compositions in the preparation of which a natural resin or derivative is employed.

FOR 112
Foreign art collection including compositions in the preparation of which a wax, bituminous material or tarry residue is employed.

FOR 113
Foreign art collection including compositions which are normally liquid and contain a definite solvent or dispersing medium.

FOR 114
Foreign art collection including compositions containing a definite flux or plasticizer.

FOR 115
Foreign art collection including compositions containing a filler, dye or pigment.

FOR 116
Foreign art collection including compositions in the preparation of which casein or a derivative thereof is employed.

FOR 117
Foreign art collection including compositions in the preparation of which a carbohydrate or derivative thereof is employed.

FOR 118
Foreign art collection including compositions in the preparation of which cellulose or derivative thereof is employed.

FOR 119
Foreign art collection including compositions in the preparation of which a cellulose ether or ester is employed.

FOR 120

Foreign art collection including compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

FOR 121

Foreign art collection including compositions in the preparation of which a fatty oil is employed.

FOR 122

Foreign art collection including compositions in the preparation of which a natural resin or derivative is employed.

FOR 123

Foreign art collection including compositions in the preparation of which a wax, bituminous material or tarry residue is employed.

FOR 124

Foreign art collection including compositions which are normally liquid and which contain a definite solvent or dispersing agent.

FOR 125

Foreign art collection including compositions containing definite flux or plasticizer.

FOR 126

Foreign art collection including compositions containing a filler, dye or pigment.

FOR 127

Foreign art collection including compositions in the preparation of which a prolamine or derivative is employed.

FOR 128

Foreign art collection including compositions in the preparation of which a carbohydrate or derivative thereof is employed.

FOR 129

Foreign art collection including compositions in the preparation of which cellulose or derivative thereof is employed.

FOR 130

Foreign art collection including compositions in the preparation of which a wax, bituminous or resinous material or tarry residue is employed.

FOR 131

Foreign art collection including compositions which contain a definite flux or plasticizer or are normally liquid and contain a definite solvent or dispersing medium.

FOR 132 **Seed protein or derivative:**

Foreign art collection including compositions in the preparation of which vegetable seed protein, e.g., soya bean protein, or derivative is employed.

FOR 133

Foreign art collection including compositions in the preparation of which feathers, hair or leather is employed.

FOR 134

Foreign art collection including compositions in the preparation of which a wax, bituminous or resinous material or tarry residue is employed.

FOR 135

Foreign art collection including compositions in the preparation of which a carbohydrate or derivative thereof is employed.

FOR 136

Foreign art collection including compositions in the preparation of which cellulose or derivative thereof is employed.

FOR 137

Foreign art collection including compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

FOR 138

Foreign art collection including compositions in the preparation of which a wax, bituminous or resinous material or tarry residue is employed.

FOR 139

Foreign art collection including compositions which contain a definite flux or plasticizer or are normally liquid and contain a definite solvent or dispersing medium.

FOR 140

Foreign art collection including coating or plastic compositions in the preparation of

which a carbohydrate or derivative is employed.

FOR 141 Cellulose or derivative:
Foreign art collection including compositions in the preparation of which cellulose or derivative thereof is employed.

FOR 142
Foreign art collection including compositions in the preparation of which viscose is employed.

FOR 143
Foreign art collection including compositions which are drawn to viscose solutions specialized for use in forming filaments, films, etc., by extrusion in some precipitating medium, i.e., spinning solutions.

FOR 144
Foreign art collection including compositions in which a delustering agent is added to the spinning solution.

FOR 145
Foreign art collection including compositions in the preparation of which cupra-ammonium solution of cellulose is employed.

FOR 146
Foreign art collection including compositions containing regenerated cellulose, whether made from viscose, cupra-ammonium cellulose or other cellulosic compositions.

FOR 147
Foreign art collection including compositions in the preparation of which a cellulose ether or ester is employed.

FOR 148
Foreign art collection including compositions which are dispersions or emulsions of cellulose ethers or esters.

FOR 149
Foreign art collection including compositions in the preparation of which a fat, fatty oil, fatty oil acid, or salt thereof is employed.

FOR 150
Foreign art collection including compositions in the preparation of which a natural resin or derivative is employed.

FOR 151 With natural resin or derivative:
Foreign art collection including compositions in the preparation of which a natural resin or derivative, e.g., rosin, copal or ester gum, is employed.

FOR 152
Foreign art collection including compositions in the preparation of which a terpene compound, e.g., camphor, pine oil, etc., is employed.

FOR 153
Foreign art collection including compositions in the preparation of which an ether, ester or alcohol is employed in addition to the terpene compound and cellulose ether or ester.

FOR 154
Foreign art collection including compositions in the preparation of which a heterocyclic compound is employed in addition to the cellulose ether or ester.

FOR 155
Foreign art collection including compositions in the preparation of which a phosphorous compound, e.g., triaryl phosphate, which is usually present as a plasticizer, is employed in addition to the cellulose ether or ester.

FOR 156
Foreign art collection including compositions in the preparation of which a compound containing a carboxylic group (-COOX, wherein X is hydrogen, a metal or an organic radical) is employed in addition to the cellulose ether or ester.

FOR 157
Foreign art collection including compositions wherein the carboxylate compound contains an ether group (C-O-C), e.g., ether-esters.

FOR 158

Foreign art collection including compositions wherein the carboxylate compound is an ester of a polyhydric alcohol.

FOR 159

Foreign art collection including compositions wherein the carboxylate compound is a polycarboxylic acid, salt or ester thereof.

FOR 160

Foreign art collection including compositions wherein the carboxylate compound is an oxo- or oxy-acid, salt or ester thereof.

FOR 161

Foreign art collection including compositions wherein the carboxylate compound is a lower fatty acid, salt or ester thereof.

FOR 162

Foreign art collection including compositions in the preparation of which an aldehyde or ketone is employed in addition to the lower fatty acid or ester.

FOR 163

Foreign art collection including compositions in the preparation of which an ether or alcohol is employed in addition to the lower fatty acid or ester and cellulose derivative.

FOR 164

Foreign art collection including compositions in the preparation of which an amine or amide is employed in addition to the cellulose ether or ester.

FOR 165

Foreign art collection including compositions in the preparation of which a ketone or aldehyde is employed in addition to the cellulose ether or ester.

FOR 166

Foreign art collection including compositions in the preparation of which an ether is employed in addition to the cellulose ether or ester.

FOR 167

Foreign art collection including compositions in the preparation of which an alcohol or a phenol is employed in addition to the cellulose ether or ester.

FOR 168

Foreign art collection including compositions in the preparation of which a halogen containing carbon compound is employed in addition to the cellulose ether or ester.

FOR 169

Foreign art collection including compositions in the preparation of which a hydrocarbon, wax, bituminous material or tarry residue is employed.

FOR 170

Foreign art collection including compositions in the preparation of which a delustering agent is employed.

FOR 171

Foreign art collection including compositions in the preparation of which a metal salt of an acid other than a carboxylic acid is employed.

FOR 172

Foreign art collection including compositions in the preparation of which cellulose nitrate is employed.

FOR 173

Foreign art collection including compositions in the preparation of which cellulose acetate is employed.

FOR 174 Cellulose ether:

Foreign art collection including compositions in the preparation of which cellulose ether is employed.

FOR 175 Carboxymethyl cellulose:

Foreign art collection including compositions wherein the cellulose ether is carboxymethyl cellulose.

FOR 176

Foreign art collection including processes which are of general application to cellulose ether or ester compositions.

FOR 177

Foreign art collection including compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

FOR 178

Foreign art collection including compositions in the preparation of which a natural resin or reaction product thereof is employed.

FOR 179

Foreign art collection including compositions in the preparation which a wax is employed.

FOR 180

Foreign art collection including compositions in the preparation of which a bituminous material or tarry residue is employed.

FOR 181

Foreign art collection including compositions which are normally liquid and contain a definite solvent or dispersing medium.

FOR 182

Foreign art collection including compositions containing a filler, dye, or pigment.

FOR 183 **Cork:**

Foreign art collection including compositions in the preparation of which cork is employed.

FOR 184

Foreign art collection including compositions in the preparation of which a carbohydrate gum; e.g., gum arabic, tragacanth, dextrin, is employed.

FOR 185

Foreign art collection including compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

FOR 186

Foreign art collection including compositions in the preparation of which wax, bituminous or resinous material or tarry residue is employed.

FOR 187

Foreign art collection including compositions which are normally liquid and contain a definite solvent or dispersing medium.

FOR 188

Foreign art collection including compositions containing a filler, dye or pigment.

FOR 189

Foreign art collection including compositions in the preparation of which starch or derivative thereof is employed.

FOR 190

Foreign art collection including compositions in the preparation of which a fat, fatty oil, fatty oil acid or salt thereof is employed.

FOR 191

Foreign art collection including compositions in the preparation of which a wax, bituminous or resinous material or tarry residue is employed.

FOR 192

Foreign art collection including compositions which are normally liquid and contain a definite solvent or dispersing medium.

FOR 193

Foreign art collection including compositions containing a filler, dye, or pigment.

FOR 194

Foreign art collection including compositions in the preparation of which a fat, fatty oil, fatty oil acid, or salt thereof is employed.

FOR 195

Foreign art collection including compositions in the preparation of which a wax, bituminous or resinous material or tarry residue is employed.

FOR 196

Foreign art collection including compositions containing a filler, dye, or pigment.

FOR 197 **Carbohydrate, protein, gum, or lignin, e.g., pectate, alginate, albumin, glue, etc.:**

Foreign art collection including subject matter wherein the composition contains a carbohydrate, protein, gum or lignin.

END